

BULLETIN 184

THE DONALDSON SITE

BY

J. V. WRIGHT

AND

J. E. ANDERSON

1963

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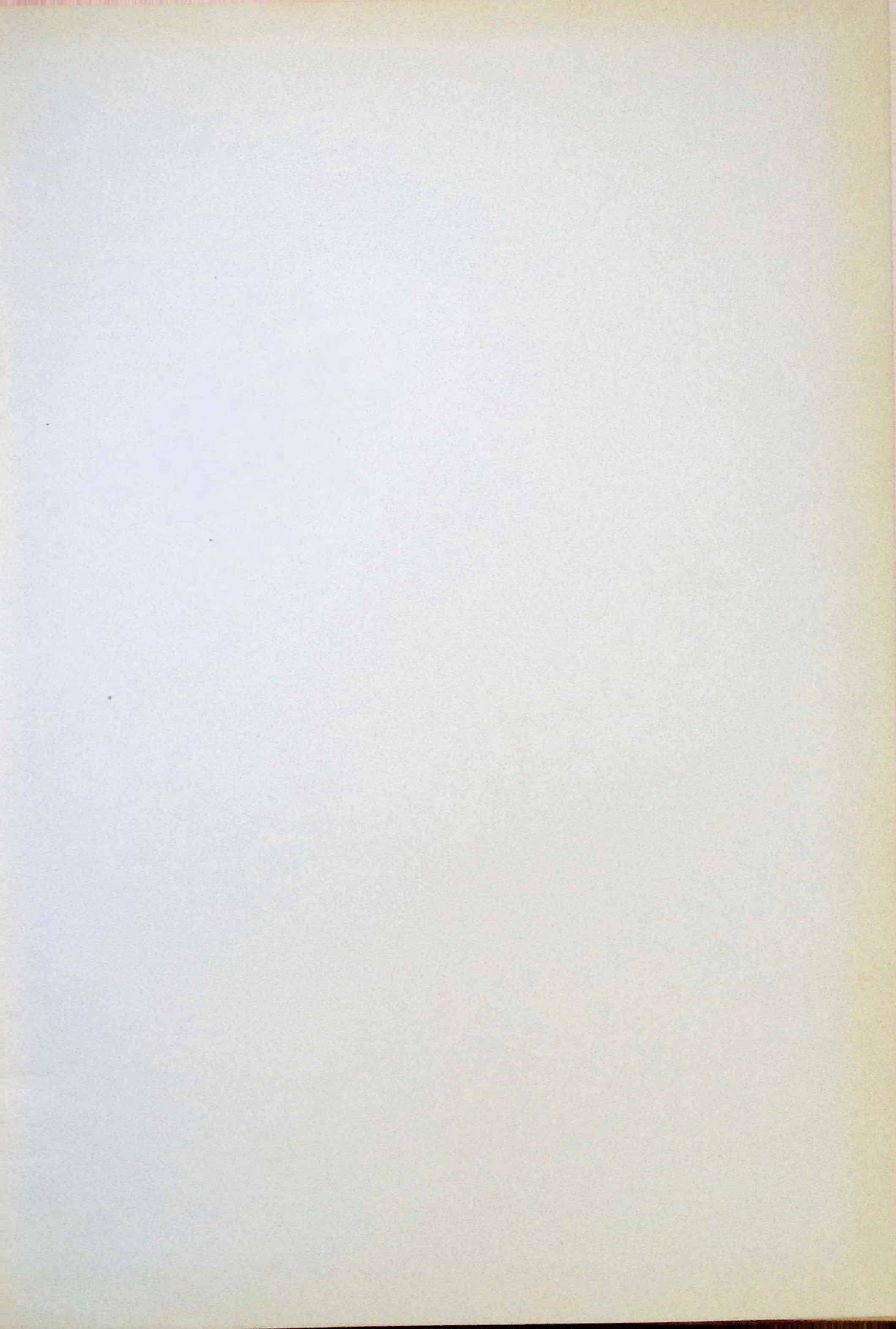
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THE DONALDSON SITE



View of Donaldson Site excavation from south bank of the Saugeen River

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THE DONALDSON SITE

By
J. V. Wright ✓
and
J. E. Anderson

Issued under the authority of
The Honourable Walter Dinsdale, P. C., M. P.
Minister of Northern Affairs and National Resources

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PART I
ARCHAEOLOGY OF THE DONALDSON SITE

BY
J. V. WRIGHT

PREFACE

For the month extending from May 15 to June 15, 1960, the writer directed a joint National Museum of Canada and University of Toronto archaeological project in the Bruce Peninsula of Southern Ontario. Sincere appreciation is extended to Professor T. F. McIlwraith, Head of the Department of Anthropology, and to Dr. J. N. Emerson, Supervisor of Archaeological Studies at the University of Toronto, whose interests were supported by grants from the Humanities and Social Sciences and the Canada Council. Dr. Emerson also prepared a map of the site.

The members of the crew were most personable and adept, and the success of the excavation, to a large extent, was due to their constant enthusiasm and efficiency. Dr. J. E. Anderson of the Department of Anatomy, University of Toronto, who was under contract with the National Museum, filled the important position of physical anthropologist on the site. Mr. W. B. Rice, National Museum field assistant, performed the critical task of maintaining a photographic record of the excavation. University of Toronto anthropology students consisted of Mr. P. D. Harrison, Miss H. E. Devereux, Miss R. M. Ford, Mr. R. B. Lee, Mr. G. F. MacDonald, Mr. D. G. MacLeod, Miss V. G. Macpherson, Mr. P. Puritt, Miss J. E. Rice, and Mr. M. Tamplin. Mr. J. W. Lash of Queen's University also spent considerable time on the site.

Many thanks go to Mr. Elmer Donaldson who allowed the excavation of his property; to Dr. J. F. Morton, Director of the Bruce Historical Museum, and Mr. Fritz Knechtel, Director of Archaeology for the same museum, for their vital co-operation in innumerable matters which greatly facilitated the excavation; to Professor D. B. Shutt of Guelph, who initially brought the existence of the site to the attention of the National Museum of Canada, and who kindly turned over all his field notes and material to the Museum; and to those people who rendered week-end assistance at the site.

The writer's sincere appreciation is extended to the following members of the National Museum staff: Dr. R. S. MacNeish and Mr. W. E. Taylor, Jr., of the Archaeology Section, for their critical reading of the manuscript; to Mr. D. E. McAllister for identification of the fish remains; to Mr. P. M. Youngman for identification of the mammal remains; and to Dr. A. H. Clarke, Jr., for identification of the shells. Dr. K. J. McCallum of the Department of Chemistry, University of Saskatchewan, kindly dated two carbon samples from the site. Dr. W. A. Ritchie, Archaeologist for the State of New York, examined the manuscript and made helpful suggestions.

ARCHAEOLOGY OF THE DONALDSON SITE

CHAPTER I

INTRODUCTION

The Donaldson site, or BdHi-1 as it is designated under the Borden system of site designation (Borden, 1952), was first brought to the attention of the National Museum of Canada by Professor D. B. Shutt of Guelph, Ontario. Professor Shutt, who had been collecting from the site since 1947, directed Mr. T. E. Lee, formerly of the National Museum, to the site in 1950 and generously presented his entire collection to the Museum. Mr. Lee dug a number of test trenches and planned a full-scale excavation which was never realized. One of these trenches cut across a cemetery, but as the weather was too severe to allow the removal of the skeletons, they were reburied. Brief mention was made of the Donaldson site by Lee (1952: 75), who placed it in the Point Peninsula Focus of the Vine Valley Aspect.

The site is located on the property of Mr. Elmer Donaldson in Amable Township, Bruce County. Geographically it is located on the north bank of the Saugeen River approximately two miles upstream from where the river empties into Lake Huron (Figure 1). At this point in the river, between steeply cut banks, the first major rapids are encountered (Plate I). The soil consisted of a sandy-clay, although sporadic fan-like deposits of relatively pure sand or pure clay were occasionally encountered. General subsoil features suggest that the variable but usually thin sedimentary deposits were laid down by river action over a heavy boulder-clay till. Two major strand lines, one at an elevation of 25 feet above the river and the other forming the present river bank, at an elevation of 7.5 feet above the river, separate two relatively flat plateaux from one another. Although aboriginal refuse is present on both plateaux, it is far more abundant on the upper one and on a small subsidiary plateau at an elevation of 19 feet.

Erosion along the northeastern edge of the site has been extensive, and as much as fifteen feet of the bank has disappeared in less than ten years. The undercutting action of the river has resulted in an almost vertical 20- to 25-foot face, which is extremely susceptible to slumping action. Artifacts are present throughout the talus, and pits and other features are frequently exposed by the erosion caused by the spring floods. Indeed, the marked erosion of what appeared to be the richest part of the site was a strong factor in the final decision for immediate excavation. The actual amount of the site which has been destroyed by the river is not calculable, but it would appear to be considerable.

EXCAVATION

The excavation technique applied at the Donaldson site was initially aimed at locating refuse pits, burials, and other subsoil features. Test pitting had revealed that, for the most part, the plough zone averaged 9 inches

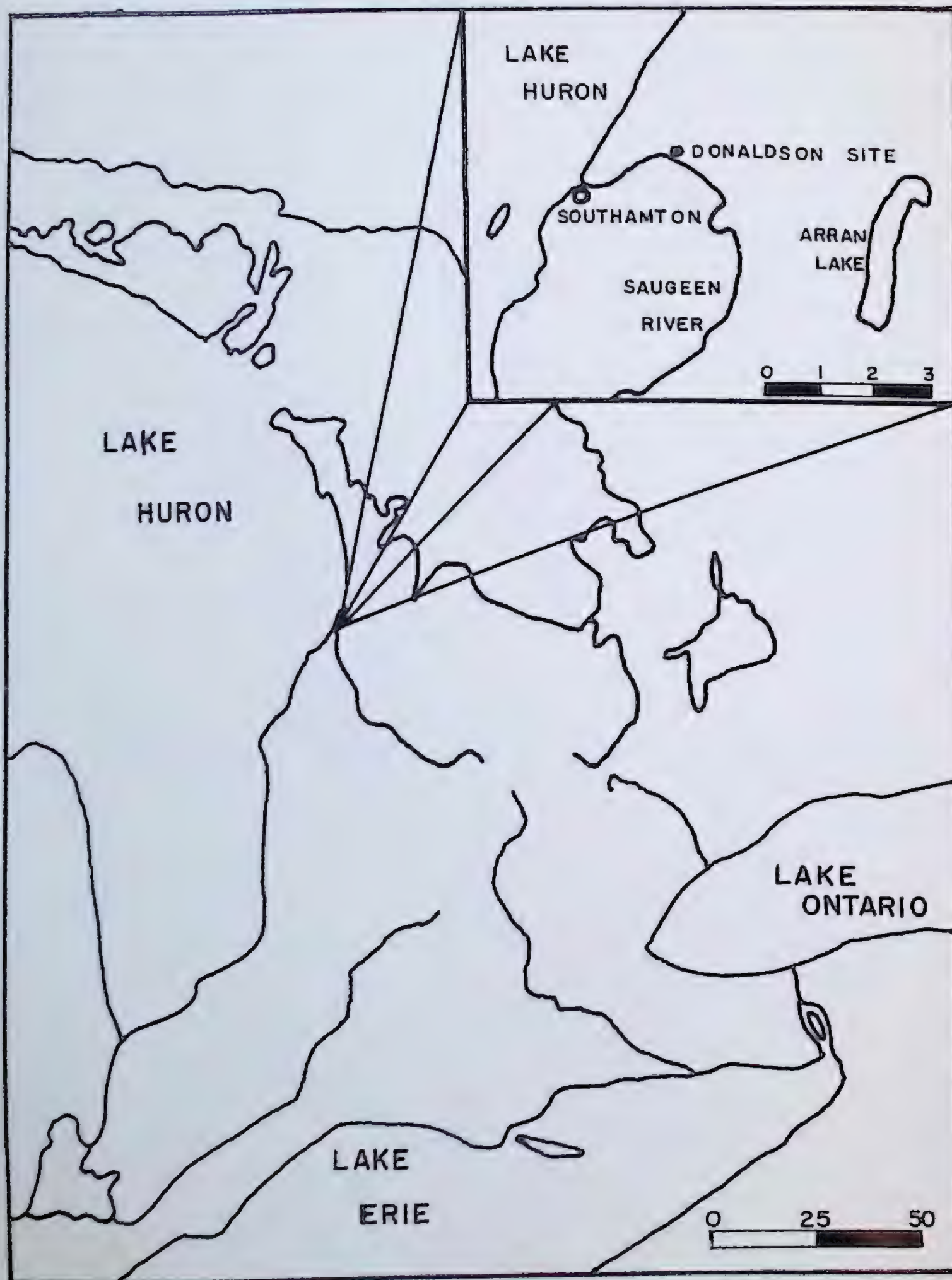


FIGURE 1. Location of the Donaldson Site

in depth and rested directly upon the subsoil. It was, therefore, decided to use a trenching technique and to divide each trench into controllable sectors. The trench could then be extended in any direction to follow out a feature. In three instances this excavation technique was abandoned to allow for larger and more easily handled units relative to the type of feature encountered. A grid consisting of ten-foot squares was used in all cases; the first consisting of a small cemetery located by test pitting, the second consisting of an unexpected midden deposit encountered while following out a house structure from one of the trenches, and the third being represented by a midden-pit concentration which was revealed by a luxuriant circular growth of twitch grass. The plough zone, in all cases, was shovelled out with only a cursory examination since the initial excavation had proved it to be very sparse in material and not worth the time or effort of careful consideration.

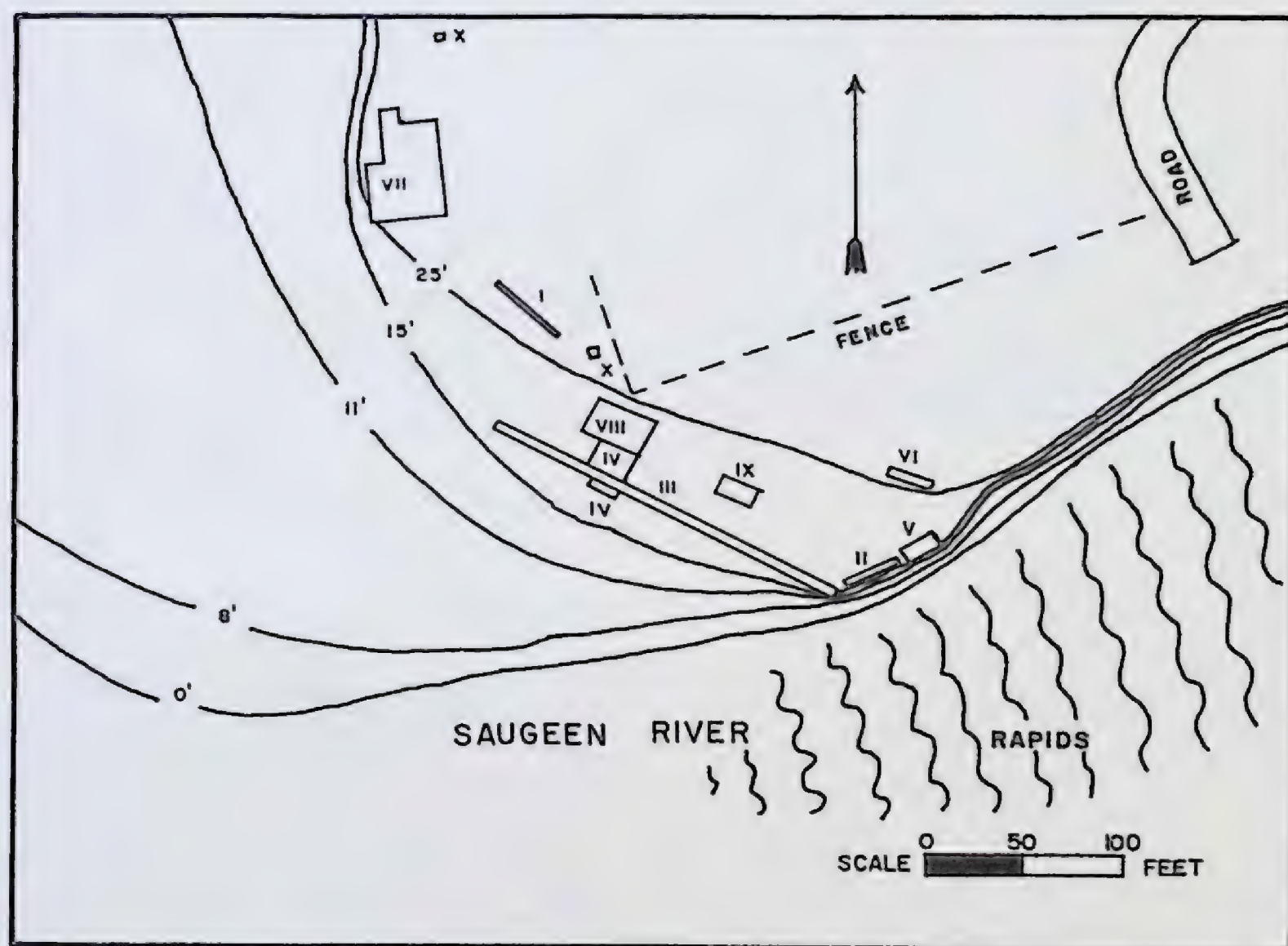


FIGURE 2. Site plan

In addition to the above excavation units, two isolated features were encountered by test pitting; these were exposed arbitrarily to allow the excavation of the feature. The square footage and dimensions of the separate excavation units are given in Table 1, and the relationship of these units to one another is given in Figure 2.

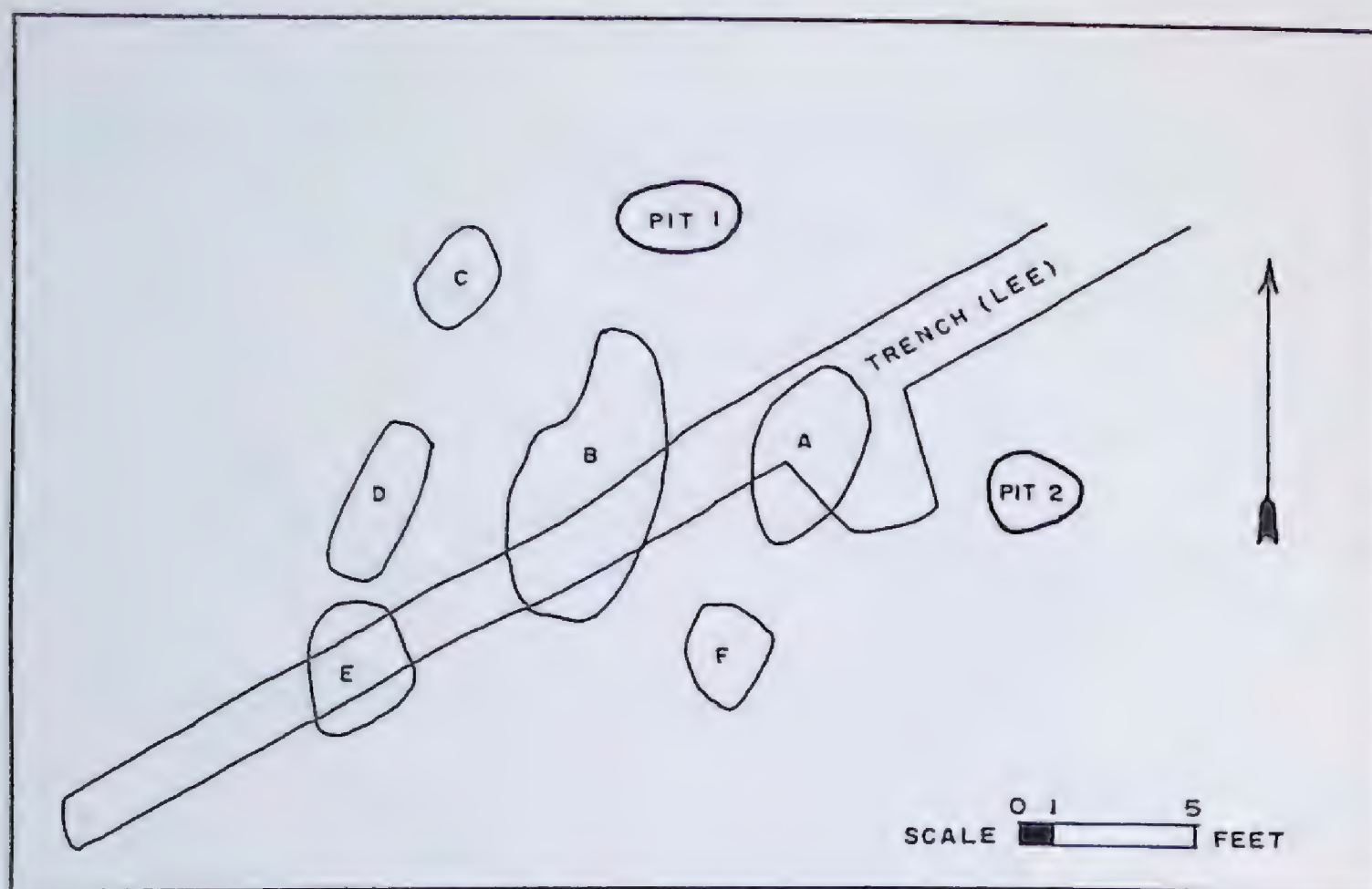


FIGURE 3. Floor plan of burial area (excavation limits extend beyond diagram)

TABLE 1.—*Excavation unit data*

Designation	Dimensions	Square footage
Trench 1 (I).....	3' x 40' in 10' sections	120
Trench 2 (II).....	5' x 30' in 10' sections	150
Trench 3 (III).....	5' x 190' in 10' sections	950
Extensions of Trench 3 (IV).....	15' x 23' and 5' x 15'	420
Trench 4 (V).....	17' x 10'	170
Trench 5 (VI).....	5' x 25' in 10' sections	125
Burial area (VII).....	19 - 10' x 10' squares	1,900
Midden A (VIII).....	6 - 10' x 10' squares	600
Midden C (IX).....	2 - 10' x 10' squares	200
Isolated features (X).....		70
	TOTAL	4,705

FEATURES BURIALS

A small cemetery, originally located but unexcavated by Lee (Mr. Fritz Knechtel, pers. comm.), was relocated, and a grid of ten-foot squares was established over the area. The plough had cut through some of the shallow graves scattering fragmented human bones over a large area. In this single instance the plough zone was checked carefully in order to recover the displaced skeletal material. With removal of the black plough zone, the yellow subsoil clearly outlined the darker fill occupying the burial pits as well as Lee's earlier trench. Besides the plough and Lee's excavation, a



View of burial excavation illustrating a portion of Lee's trench cutting across the burials

limited amount of disturbance had been caused by the activity of a single amateur. Professor Shutt, however, obtained the removed skeletal material and forwarded it to the National Museum. Figure 3 and Plate II illustrate the relationship of the six graves, two pits, and Lee's trench to one another.

Burial A (Plates III-IV)

Burial A consisted of a symmetrical elliptical pit filled with a homogeneous greyish fill to a maximum depth of twenty inches. Lee's trench cut directly across the grave but had only probed sufficiently to determine that the feature was a grave and not a refuse pit. Three individuals, all children, had been placed in the grave and have been designated individuals AA, AB, and AC.

Individual AA had been placed on its stomach with the knees drawn up to the right. The right upper limb was flexed with hand at face; the left forearm rested under the stomach. The skull was facing down, and the body pointed toward the north. Although the skull was partially crushed, the remains were in an excellent state of preservation.



Burial AA

Individual AB, in contrast to individual AA, was in very poor condition. Only the lower portion of the body could be oriented accurately; it consisted of the dorsal pelvic area resting directly against the face of individual AA. The lower limbs were flexed with the distal right lower limb resting on top of the proximal right humerus of individual AA. The upper portion of the body appeared to have been placed on the left side with the hands at the face, the body heading north and facing roughly east. This reconstruction of the upper portion of the body, however, is tentative because of the poor condition of the remains.

Individual AC, represented by the scattered remains of a very young child, occurred directly under the other two individuals.

Grave offerings were abundant and appeared to be largely associated with individual AA. An elaborate necklace, consisting of two ground and perforated bear canines, four copper beads, and a number of marginella beads, was dispersed around the upper torso and skull region of individual AA. Two of the seventeen marginella beads occurred in the limb region but may still represent part of the scattered necklace. Also found with



Grave goods cluster at head of Burial AA

individual AA were one beaver incisor at the right shoulder, another in front of the right maxilla, and two at the right elbow. A thin deposit of red ochre was found behind and in front of the skull. Two pseudo scallop shell-impressed body sherds, probably representing accidental intrusions, were also found with individual AA. A major cluster of grave offerings occurred at the head of individual AA and extended northward beside the spinal column of individual AB. This concentration of artifacts consisted of five beaver incisors, two flakes, one strike-a-light (?), two end scrapers, one bone flaker (?), one antler handle into which one of the end scrapers fits, and one rodent mandible chisel.

A number of marginella beads, most likely representing a necklace, were found near the skull of individual AC.

While individual AC was being exposed, a small circular pocket, 6 inches in diameter, 3 inches deep, and cut into the subsoil floor of the burial pit, was located at the eastern edge of the grave. In it were found one side-notched projectile point and a beaver incisor.



Burial B showing flexed individuals BD and BE and bone bundle containing individuals BB and BC

Burial B (Plate V)

Burial B represented a complex situation involving five individuals. Lee's trench had also cut directly across this burial.

Individual BA was represented by the much disturbed remains of an infant which rested several inches above the pelvic region of individual BD. Two clumps of marginella beads, one of two specimens and the other of three specimens, which occurred near the fragmented remains, are possibly associated.

Individuals BB and BC consisted of two adults who had been piled together forming a highly fragmented mound of bones at the north end of the grave. Some infant bones were also present in this mound of bones and may represent a sixth individual or parts of individual BA. It definitely appears that the aboriginal excavation of the grave to contain individuals BD and BE had cut through an earlier burial containing individuals BA, BB, and BC, individual BA having been thrown back into its original grave in the back dirt, and individuals BB and BC having been carefully collected and deposited in a heap of the northern edge of the grave. It also appears that a portion of the earlier burial pit remained around the bone mound where the fill consisted of a dark refuse-bearing soil quite distinct from the lighter and refuse-free fill of the second burial pit. The stray bone fragments found around individuals BD and BE are almost certainly portions of individuals BA, BB, and BC which had been included in the secondary fill. Many of the scattered fragments encountered in the plough zone may also be due to this aboriginal disturbance.

Individual BD rested on its right side in a tightly flexed position with the hands at the face. The skull had been removed by an amateur prior to the excavation but was subsequently recovered in good shape. If the skull had been in a normal articulated position, it would have rested on the right ilium of individual BE and faced west while the body headed south.

Individual BE rested on its left side in a tightly flexed position. The skull, twisted around in an unnatural fashion, faced south. The body was headed south with the right arm under the head and the left arm on the breast. Because of the body being placed in the southern end of the grave, the upper half of the body was resting on the side of the pit resulting in its being higher than the lower part of the body.

Other than the five marginella beads apparently associated with the disturbed individual BA, grave offerings were absent.

Burial C

This burial consisted of a young infant resting on its right side in a loosely flexed position heading south and facing west. It occupied a relatively large, elliptical pit which attained a depth of thirteen inches below the surface of the subsoil. The fill was a homogeneous brown clay with lenses of yellow clay. Sporadic firestone fragments and flint flakes occurred throughout the fill. A marginella bead necklace consisting of thirteen beads rested about the neck region.

Burial D (Plate VI)

Burial D consisted of a large male resting on his back with the lower limbs forced straight back over the body and with the right distal lower limb resting in the pelvic girdle. The right arm rested straight down by



Burial D

the side, while the left arm was flexed with the hand resting on the chest. The body headed approximately north and faced west in a rectanguloid pit cut 9 to 12 inches into the subsoil. Grave fill consisted of mottled clay which contained firestone, flakes, refuse, bone, and pottery. It would appear that the body was in a highly decomposed state when it was placed in the grave. This condition was suggested by the absence of the left leg below the knee, the right foot, both patellas, the right hand except for some wrist bones, and the partial absence of the left hand. Also the radius and ulna of both upper limbs were splayed apart. Grave offerings were absent.

Burial E

Little remained of this burial other than the badly crushed skull and some ribs and digits of a young infant. Lee's trench cut directly across the grave, and a depression produced by a square-edged shovel cut into the floor of the pit. This intrusion would have neatly cut the body in half removing the lower portion. It is almost certainly the work of an earlier amateur. The ovate pit which extended for a depth of 6 inches into the subsoil was filled with a homogeneous refuse-free brown clay. Grave goods were absent.

Burial F

This burial was not recognized until 12 inches of disturbed soil beneath the plough zone had been removed. The area above the burial pit which consisted of mottled clay, produced the odd fragment of human bone and general refuse and extended into Burial B and Lee's trench in a rather complex manner. The proximity of the grave to the aboriginally and recently disturbed Burial B probably accounts for the situation. A young infant's skull occurred at a depth of 14 inches below the plough zone in a dense black fill. The bone was so fragile that the skull was removed in a block. Grave goods were absent.

HOUSE STRUCTURES

The discovery of post moulds in Trench 3 led to the expansion of the excavation which eventually exposed two house structures. Figure 4 and Plate VII illustrate the structures and associated or near-by features. All post moulds were either cross-sectioned or scooped out. Many were clearly outlined by dark refuse fill, but many others were virtually invisible until moistened, in which case the differential permeability of the post mould clearly expressed itself.

House Structure I

House Structure 1, the larger of the two, was well demarcated with one hundred and seventy-two posts being involved in its construction. Of particular interest were three evenly spaced large posts which were medially located down the long axis of the rectangular structure with two near either end and one in the centre. They would appear to represent central support posts and, as such, suggest that the structure was gabled. Four other posts, smaller than the major support posts but larger than the posts making up the remainder of the structure, appeared to have also served as vertical supports for a ridge pole. Three of these posts were associated with the two large posts at either end of the structure, while the remaining post occurred along the medial axis. The main support posts, running from the north end of the structure south, had diameters of .7, .85, and .7 feet (Plate VIII), and the slightly smaller support poles had diameters of .4, .35, .4, and .5 feet. In general, the walls appeared to have been composed of a mass of randomly placed posts. No particular placement pattern was noted, although there was a slight tendency for posts to occur in pairs. The width of the massed posts that mark the walls of the structure average 2.5 feet and, therefore, may represent both the wall posts and interior bench and/or support poles. If, for convenience sake, we regard the long axis of the structure as running north-south, then the majority of the interior posts occur in the northern third of the structure. No pattern was noted in the arrangement of these interior posts; possibly they may represent support posts for a sleeping platform. The interior posts which could not be differentiated from the wall posts according to either diameter or depth, have, therefore, been regarded collectively with reference to these attributes. Post diameters ranged from .1 to .4 feet with a mean of .2 feet. The cross-sectioned moulds ranged

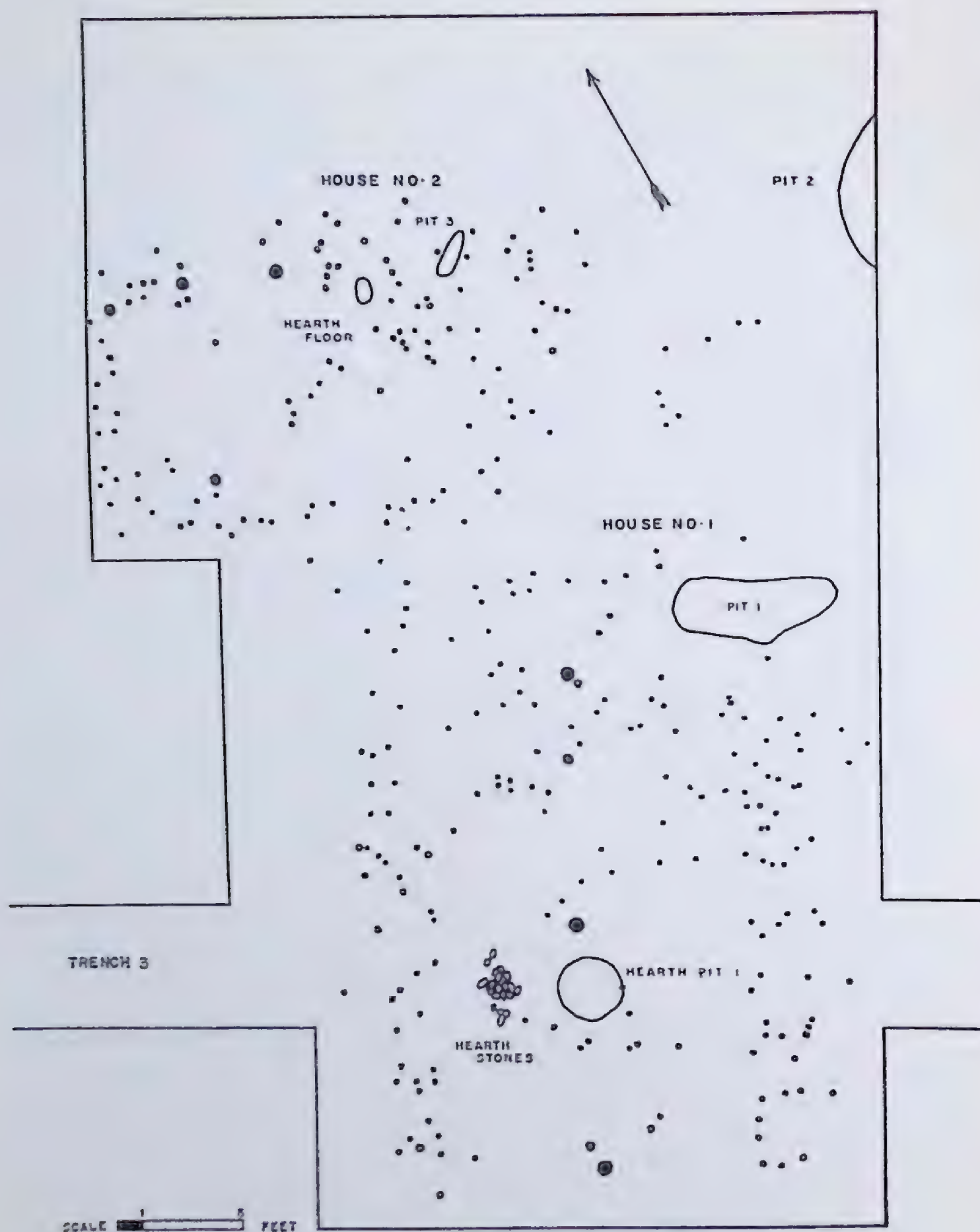


FIGURE 4. Floor plan of House Structures 1 and 2

from .4 to 1.0 feet in depth with a mean of .7 feet. A southern wall was absent, and probably the gap represents the entrance to the structure. It is possible to envisage a vertically hung hide or mat-covering protecting this end of the structure and, at the same time, allowing easy entrance. Medially located in the southern portion of the structure was a circular hearth-pit (Hearth Pit 1 in the House Structure area), with an associated mound of unused firestones near at hand. This composite feature, encountered



View of house area excavation

prior to the recognition of the house structure, was removed as an isolated feature. The symmetrical basin of the pit was 9 inches in depth and was filled with a thin layer of black ash and a few firestone fragments which rested on a dark brown ashy-clay zone, rich in fish bones and containing a few sherds. This major fill stratum, in turn, rested on the fire-reddened subsoil floor (profile in Figure 6). Carbon flecks occurred throughout the pit fill but in insufficient quantity to allow a carbon reading. To one side of the pit occurred the mound of hearthstones composed of seventy unfired, sedimentary, igneous, and metamorphic river cobbles.

A large pit (Pit 1 in the House Structure area) occurring over the northeast corner of the structure presented a number of problems in interpretation. Since the dense black fill of the pit prevented recognition of post moulds, it was impossible to deduce whether the feature was older, younger, or associated with the house structure. If contemporaneous then the north wall of the structure must lie to the south of the feature and be represented by a series of posts, including the northernmost large medial post moulds, it was impossible to deduce whether the feature was older, the writer's opinion that the pit is not associated with the structure and that it has effectively obliterated clear evidence of the northeast corner of the structure. The pit itself was a steep-sided elliptical feature with a



Cross-sectioned main support post in House Structure 1

maximum depth of 21 inches. Along the southwestern side and floor of the pit, the careful placement together of a number of large cobbles suggested that the feature had originally functioned as an oven prior to its use as a refuse pit. A very heavy concentration of fish bones occurred near the

floor, and the black-ashy fill proper was rich in pottery, firestone, bone, and miscellaneous stone artifacts. The approximate dimensions of this house were 23 feet by 17 feet.

House Structure 2

House Structure 2 occurred directly north and to the west of House Structure 1. It was also approximately rectangular in shape, although smaller and not so well defined as the first structure. A medial line of large supporting posts was absent, although two large posts, occurring along the north wall near the northwest corner, appeared to act as supports on either side of a doorway. Their diameters were .7 and .9 feet. Also opposite these posts and near the south wall occurred another large post with a diameter of .9 feet. Two other larger than usual posts with diameters of .4 and .5 feet were found in the northeast corner and the eastern end of the structure. An additional one hundred and twenty posts, ranging from .1 to .3 feet in diameter with a mean of .2 feet, made up the remainder of the structure. Interior posts were largely concentrated in the northeast corner; however, extensive tree-fall disturbance in the southeastern portion of the structure may account for the absence there of post moulds. Near the north wall and slightly to the east, a small ovate hearth floor was exposed. The area consisted merely of a fire-reddened and partially baked floor. Also, along the north wall but farther to the east, a small elliptical pit (Pit 3 in the House Structure area) filled with black ash and refuse was encountered.

East of the structure, eight post moulds, which formed, approximately, a right angle, were encountered. The use of this grouping of posts is purely conjectural, but it may have represented such a structure as a wind-break or stand. The posts ranged from .1 to .2 feet in diameter.

For the most part, the post moulds making up Structure 2 were more clearly defined than those of Structure 1. The explanation of this condition appears to lie in the fact that Structure 2 was largely covered by a dense black-ashy midden. It appears that in filling the post moulds the blacker midden soil allowed a greater ease of identification. The approximate dimensions of this structure were 17 feet by 11 feet.

Trench 3 cut across other post moulds which bear no relationship to the already described house structures and apparently represent other houses or unknown features which time did not permit us to investigate further.

MIDDENS

Three areas were encountered where undisturbed refuse occurred under the plough zone and above the subsoil. These areas have been designated Middens A, B, and C.

Midden A (Figure 5 and Plate IX)

In the process of exposing the house structures, Midden A was encountered. As had been stated earlier, House Structure 2 was partially covered by the deposit, although the greatest depth of undisturbed refuse

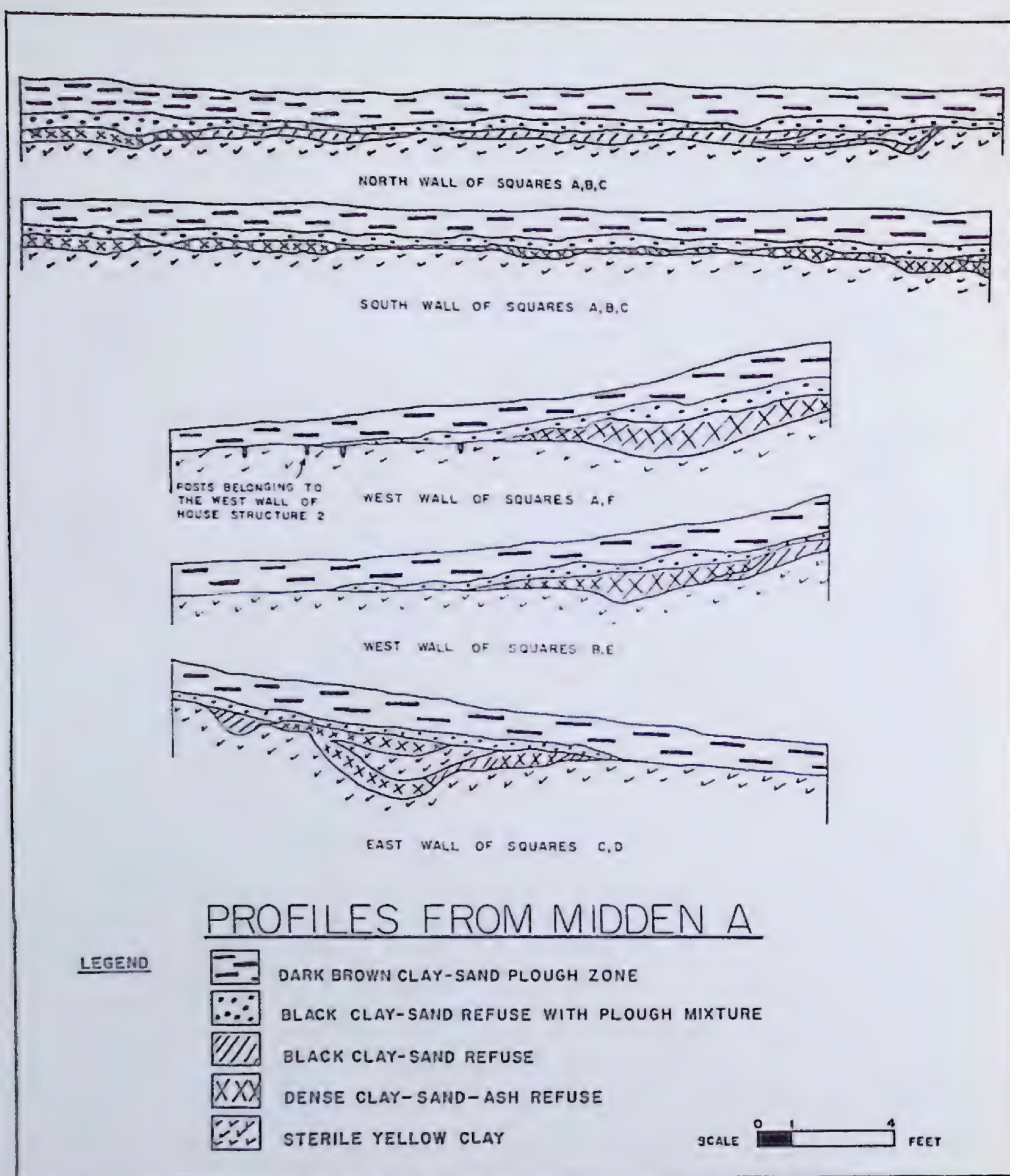


FIGURE 5. Profiles from Midden A

lay to the north of the structure. As soon as the undisturbed deposit had been delineated by two test pits, a grid, consisting of six 10-foot squares, was laid out over the area. This grid was then connected to the stripping excavation that had exposed House Structure 1. Initially, the squares were excavated in three-inch levels, but it was shortly discovered that stratigraphy or superposition was absent and that the midden had apparently been deposited in a relatively short time. Such being the case, the maintenance of levels was abandoned.



Northwest corner of Midden A

Extending from the surface down, soil conditions consisted of a homogeneous dark brown clay-sand plough zone, which ranged from 6 inches to 13 inches in thickness and, though sparse in artifacts, contained the odd pioneer artifact. Below it was a dark zone, 3 inches in thickness, which apparently represented an area of slight plough disturbance. This zone was richer in artifacts and also contained the odd item of recent white manufacture. The undisturbed midden deposit was characterized by two zones; one, which made up the greater part of the undisturbed midden, consisted of a dense black clay-sand-ash mixture; the other zone contained less organic material and, although black, was much lighter than the other deposit. Both zones were very rich in artifactual material, especially pottery, and the bulk of the artifacts recovered from the midden came from these two zones. The rich nature of these six squares over Midden A is demonstrated by the fact that they produced 51 per cent of all the artifacts recovered from the site.

As can be seen from the profiles in Figure 5, the deposit partially filled the depression at the foot of the highest strand line on the site and in this sense, appeared to represent a hill-side dump. The deposit would also appear to antedate House Structure 2.

Midden B

Trench 4, consisting of a 17- by 10-foot unit, was located directly on the bank edge overlying a midden deposit which had been exposed by bank erosion. The sterile floor underlying the midden was extremely irregular and may have been created by a very large tree-fall. Such a depression would be a natural area for discarding refuse. The undisturbed black clay-sand refuse, which ranged from 7 to 12 inches in depth, was covered by a plough zone cap approximately 11 inches in thickness. This midden was similar to Midden A, in that pottery was quite abundant but differed in its substantial production of stone artifacts and general chipping detritus. Firestone fragments were very abundant, but animal bone was sparse.

Midden C

Midden C was discovered by Professor Shutt on the basis of a rich, circular growth of twitch grass. Unfortunately time prevented the complete excavation of the area which was completely encompassed by a 20-foot square subdivided into four 10-foot squares. The excavated area, however, did reveal that the subsoil surface was very irregular, as was the case in Midden B. Whether this condition was due to tree-fall action or erratic aboriginal excavation could not be determined, although the former possibility is favoured. A partially stone-lined pit was encountered in the northwestern portion of the excavation, but the feature was dimensionally so irregular that it appeared as if the natives had merely lined a natural depression (tree-fall) with stones—possibly in order to construct an oven (Plate X). As in the previous middens, the undisturbed refuse was a dense black clay-sand containing sporadic lenses of ash concentration.

The preceding three middens produced 6,678 specimens or 80 per cent of all the artifacts recovered from the site, exclusive of bone refuse and chipping detritus. The majority of the remaining 20 per cent was recovered from pits.

PITS

Eleven features that could be designated as pits were excavated. Four occurred in the area of the house structures, three in the burial area, one each in Trenches 2 and 3, one in Midden C, and one isolated from all the major excavation units (Figure 6).

House Structure Area

Pits 1 and 3 and the Hearth-Pit of House Structure 1 have been described in the section dealing with House Structures.

Pit 2 occurred along the east wall of Squares C and D and first appeared as a compact mass of fragmented firestones resting in black ashy clay-sand at a depth of from 7 to 9 inches below the plough zone. Upon removal of the firestones, the pit outline was revealed. The profile of Pit 2 may be seen in the east wall of squares C and D, as illustrated in Figure 5.



Stone-lined hearth in Midden C

It would appear that the concentrated mass of firestones resting on the subsoil bordering the pit had been used in a roasting operation and then had been scooped out when they became too fragmented to be of further use. The heavy lens of sterile clay comprising the final pit stratum and

underlaid by a stratum of black ashy-clay, as well as the abundance of firestones, suggested that the feature had functioned as a roasting pit. The firestone mass overlying the pit was rich in pottery, chipping detritus, and bone refuse. General village debris was also present in the black stratum of the pit fill.

Burial Area

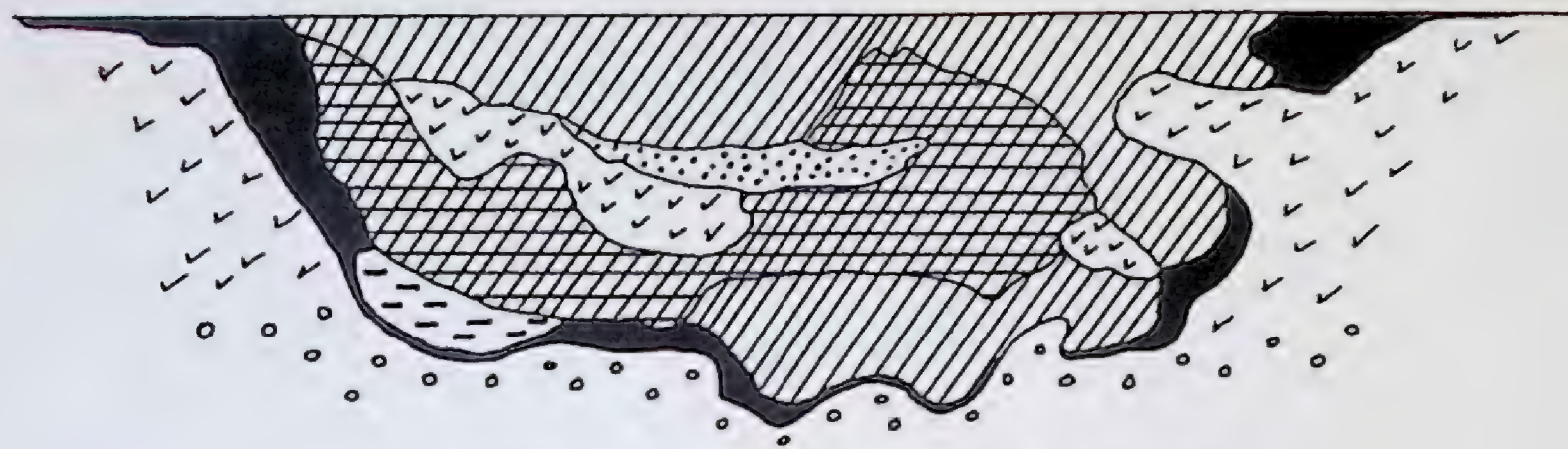
Pit 1 occurred north of Burial B. This hearth-pit was 60 inches by 31 inches and was first delineated at a depth of 7 inches from whence it attained a maximum depth of 5 inches. The pit fill was complex, consisting of lenses of black and grey ash, sterile yellow clay-sand, and areas of pure white lime where limestones had been reduced by fire. Both the basin-shaped floor of the pit and the surrounding area had been burnt quite red. A half-dozen large limestone hearthstones, partially reduced to lime, occurred near the southern edge of the feature. The only material recovered consisted of a small quantity of pottery and some carbonized animal bone.

Pit 2 was located east of Burial A and the southeastern extension of Lee's trench. Like Pit 2 in the House Structure area, the surface of the pit and the surrounding area were covered with a mantle of highly fragmented hearthstones. Upon removal of the firestone covering, an ovate pit outline, 33 inches by 27 inches, was revealed at a depth of 14 inches. The basin-shaped floor of the pit which attained a maximum depth of 18 inches was filled with a dense black, carbon-rich lens surrounding a compact mass of hearthstones (over 200), overlying a grey-black ashy sand which was full of both firestones and artifacts and rested on the fire-reddened subsoil. The northern side and outside edge of the pit was also intensely fire-reddened. Pottery, animal refuse, and a large carbon sample were recovered from the upper stratum. Like Pit 1 to the northwest, this feature appears to have functioned as a hearth-pit.

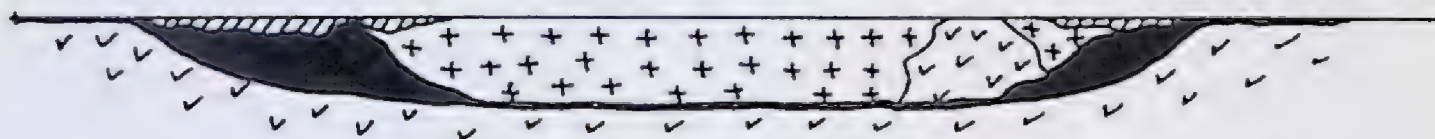
Pit 3, not included in Figure 3, was uncovered to the north of the cemetery. It was 72 inches long and 42 inches wide and had been cut into the subsoil to a maximum depth of 24 inches. The pit was filled with a lens of black ash resting on top of a mixed stratum of sterile yellow clay and grey ash which, in turn, rested on another layer of black ash in the northwest and southeast portions of the pit or on a fire-reddened floor in the rest of the pit. The entire floor, sides, and a large area around the pit had been burnt quite red. Once again, this feature appeared to have functioned as a hearth-pit. Firestone was rare, but a number of flint artifacts, pottery, chipping detritus, bone refuse, and a carbon sample were recovered from the black ashy lenses.

Trench 2

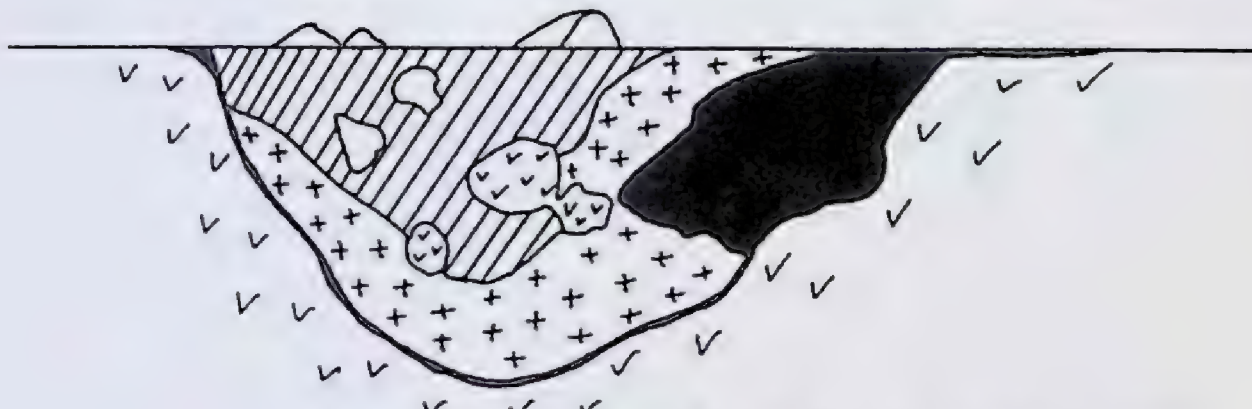
The pit in Trench 2 occurred along the south side of Sector 12 and was irregular in shape, measuring roughly 24 inches in length and 12 inches in width with a maximum depth of 12 inches. The fill consisted of a black ashy clay-sand, rich in hearthstones and pottery fragments. Evidence of a fire-reddened floor was absent. The over-all form of the feature suggested that it represented a tree-fall depression which had subsequently been filled with village debris.



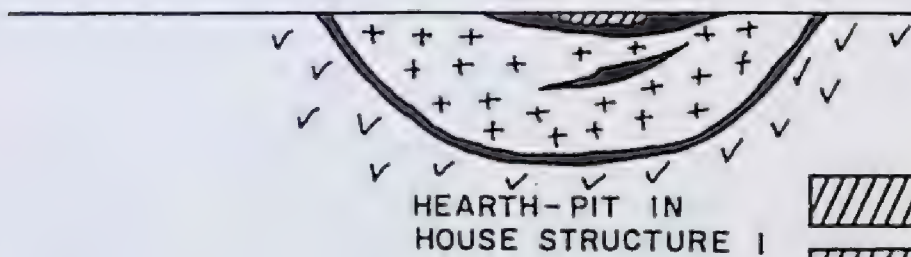
LONG PROFILE OF PIT 3 (BURIAL AREA)



LONG PROFILE OF PIT 1 (BURIAL AREA)



SHORT PROFILE OF PIT 2 (BURIAL AREA)

HEARTH-PIT IN
HOUSE STRUCTURE 1LEGEND

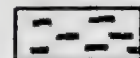
BLACK CLAY-ASH



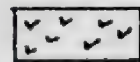
YELLOW CLAY-ASH



BLACK AND WHITE ASH



FIRED CLAY AND BLACK ASH



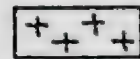
YELLOW CLAY-SAND



GREY CLAY



FIRED CLAY



GREY ASH-CLAY



HEARTH STONE

SCALE 0 1 3 FEET

FIGURE 6. Pit profiles

Trench 3

The pit in Trench 3 was located in Sector 20 and was similar to the pit encountered in Trench 2 in that its outline was irregular and evidence

of the direct use of fire was lacking. It measured 43 inches in length and 39 inches in width and was approximately triangular in shape. The profile was irregular, with a maximum depth of 17 inches, and was filled with a black soil, rich in charcoal, pottery, and firestone. A large portion of one vessel was obtained from this feature. As with the pit in Trench 2, the feature would appear to represent a tree-fall depression which became filled with refuse.

Midden C

The pit in Midden C was described earlier in the section dealing with Middens (Plate X).

Isolated Feature

During the process of test-pitting for burials, an area of undisturbed refuse was encountered. Excavation revealed a large tree-fall depression filled with refuse. The feature was 43 inches in length and 38 inches in width, and trianguloid in shape. The black sandy refuse, which constituted the major fill of the pit, extended for a depth of 38 inches into the subsoil and was overlaid by 7 inches of plough zone. Lenses of stained soil ran off from the feature in a number of directions and appeared to represent root cavities. Village debris in the form of pottery, stone tools, firestone fragments, chipping detritus, and bone fragments was very abundant.

It may be noted that the pits encountered at the site represented two types. These were man-made hearth-pits which presented evidence as to their function being that of food preparation. Two were lined with large hearthstones which suggested their use as ovens. The other type of pit represented tree-fall depressions which had been used for refuse. The pit in Midden C was the single exception, and it has been suggested that it was a tree-fall pit which had been partially modified into an oven. It would appear from present evidence that these Middle Woodland people were not in the habit of constructing pits for the purpose of garbage disposal, although natural depressions would be used as such. On the contrary, deposition of refuse in middens appeared to be the normal method of disposal, and constructed pits were only used in this manner after they had served as hearths.

FIRE FLOORS

In the Burial Area a number of irregular areas of fire-reddened subsoil were encountered. As has already been noted, areas of burnt soil occurred around all the pits in this area. In addition to these, large areas of mottled fire-reddened and yellow subsoil extended north in an irregular fashion for 12 feet from Pit 1. Several irregular patches of fire-reddened clay were also noted to the south of Pit 2.

Along the north wall of House Structure 2 (Figure 4), an ovate area of fire-reddened soil was encountered and was interpreted as an aboriginal hearth-floor.

CHAPTER II

CERAMIC ANALYSIS

During the excavation of the Donaldson site it was assumed that the station represented a western expression of the Point Peninsula 2 Focus belonging to the Woodland Pattern. As the ceramic analysis progressed, however, marked differences were seen to exist between this station and the Point Peninsula 2 Focus as defined by Ritchie (1944, 1951). The complex was recognized as an early focus of the Middle Woodland period and is designated as the Saugeen Focus. Although the Saugeen and Point Peninsula 2 foci ceramics possess certain attribute correspondences, it is impossible to apply the Point Peninsula ceramic typology (Ritchie and MacNeish, 1949) to the Saugeen ceramics. The only other components of this focus to be reported upon (Jury and Jury, 1952; Kenyon, 1959; Lee, 1960) did not produce sufficient numbers of rim sherds to allow

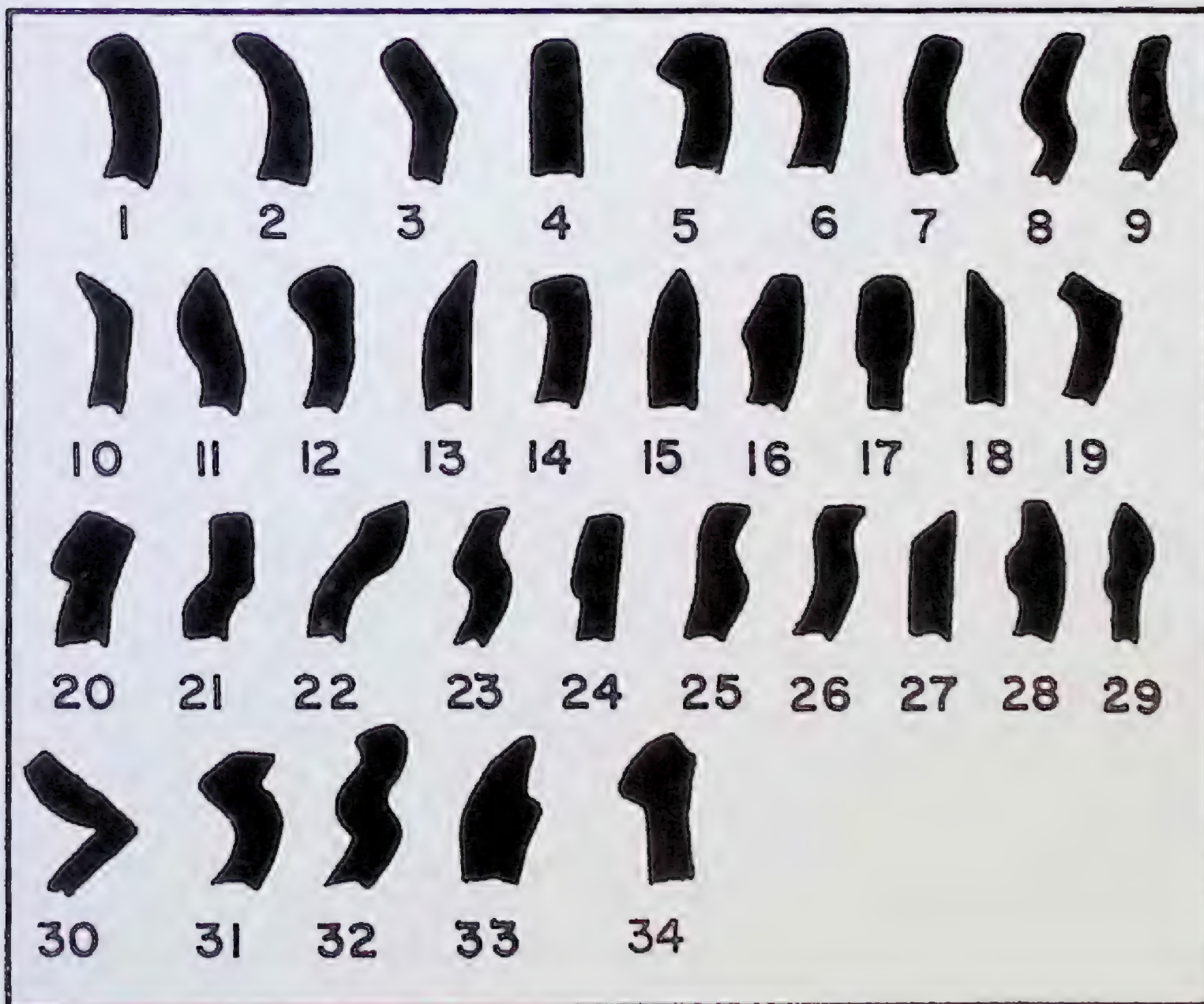


FIGURE 7. Rim sherd cross-sections (exterior to the left)

effective comparisons; thus a typology could not be established. Such being the case, the pottery, for the most part, was segregated into categories on the basis of decorative technique and was further subdivided into varieties on the basis of motif. An attempt is made to present the ceramic data in such a way that when future comparative samples become available the ceramics from the Donaldson site can be incorporated into a meaningful typology.

RIM SHERDS

Four hundred and fifty-five analysable rim sherds were obtained from the site including thirty-one rims recovered previous to the excavation by Lee and Shutt.

Pseudo Scallop Shell (Plates XI and XII)

Technique. From experimentation it would appear that the diagnostic decorative technique of this category is realized by impressing the side of a saw-toothed implement with rounded edges into the wet clay. The range of execution is considerable and, at times the toothed nature of the implement can be clearly seen, but in other instances the gentle application of the same implement results in the more characteristic spiral meander pattern which leaves no suggestion of teeth.

Motif ¹	%	f
One or more rows of obliques.....	23.1	40
One row of obliques over horizontals.....	16.8	29
One or more rows of chevrons.....	16.2	28
Criss-cross.....	12.7	22
Criss-cross over horizontals.....	7.5	13
One row of obliques over criss-cross.....	6.4	11
Horizontals.....	2.9	5
Criss-cross over horizontals with superimposed incised lines.....	2.9	5
Criss-cross over one or more rows of obliques.....	2.3	4
One or more rows of verticals.....	2.3	4
One row of verticals or obliques above horizontals with superimposed incised verticals or obliques.....	1.7	3
Obliques over punctates.....	.6	1
Obliques over horizontal dentate.....	.6	1
Obliques over horizontals over triangular zoned plats over horizontals over obliques.....	.6	1
Obliques over verticals.....	.6	1
Obliques over horizontals with superimposed vertical rocker stamping.....	.6	1
A repeating series of obliques over horizontals.....	.6	1
Verticals over horizontals with zoned verticals.....	.6	1
Obliques over criss-cross over verticals.....	.6	1
A blank zone over obliques.....	.6	1
TOTAL.....	100.2	173

¹ Where no qualification is designated for a motif, it is to be considered that the decorative technique under immediate discussion is involved. Also "over" is synonymous with "above."

Lip decoration consisted of—

Obliques.....	108
Absent.....	33
Verticals.....	27
Criss-cross.....	2
Encircling.....	1
Chevron.....	1
Oblique dentate.....	1
TOTAL.....	173

Interior decoration consisted of—

A single row of obliques.....	77
Incised or pseudo scallop shell criss-cross.....	26
Absent.....	22
Verticals.....	19
Chevron.....	19
Oblique over incised criss-cross.....	4
Oblique over vertical.....	3
Oblique dentate.....	2
Oblique over chevron.....	1
TOTAL.....	173

Rim cross-sections, which may be seen in Figure 7, were represented by the following percentages: 50.5 form 1; 11.9 form 2; 10.2 form 3; 5.7 form 4; 5.7 form 5; 2.8 form 6; 2.8 form 10; 1.7 form 11; 1.7 form 12; 1.1 form 16; 1.1 form 7; .6 form 34; .6 form 17; .6 form 18; .6 form 19; .6 form 20; .6 form 21; .6 form 22; .6 form 23.

Rim thickness was measured one inch below the lip and ranged from 4 mm to 11 mm with a mean of 7.7 mm.

Dentate Stamped (Plate XIII)

Technique. Impressions were made with a toothed implement producing a series of large, crude, square and/or rectangular impressions which were usually 2 mm to 3 mm in length. The teeth were frequently shallow resulting in the shaft of the implement being impressed into the clay as well.

Motif	%	f
One or more rows of obliques.....	30.8	52
Oblique or vertical over horizontals.....	24.9	42
Criss-cross.....	13.0	22
Horizontals.....	11.8	20
Chevron.....	6.5	11
Criss-cross over horizontals.....	3.0	5
Obliques over horizontals over obliques.....	1.2	2
Blank space over obliques.....	1.2	2
Oblique over criss-cross.....	1.2	2
Pseudo scallop shell obliques over horizontals over punctates.....	.6	1
Obliques over verticals with superimposed incised verticals.....	.6	1
Verticals over chevron.....	.6	1
Obliques over criss-cross over obliques.....	.6	1
Opposed obliques.....	.6	1
Horizontals over punctates.....	.6	1
Oblique over punctates.....	.6	1
Obliques and incised obliques over obliques.....	.6	1
Oblique over vertical.....	.6	1
Incised oblique over horizontal.....	.6	1
Vertical over blank space over horizontal.....	.6	1
TOTAL.....	100.2	169

Lip decoration consisted of—

Obliques.....	74
Absent.....	39
Encircling.....	28
Verticals.....	16
Punctates.....	5
Circular punctate.....	2
Notched.....	2
Criss-cross.....	1
Destroyed.....	2
TOTAL.....	169

Interior decoration consisted of—

One or more rows of obliques.....	63
Absent.....	28
Criss-cross.....	25
Verticals.....	20
Rocker Stamped.....	8
Chevron.....	6
Horizontals.....	4
Punctates.....	3
Circular punctates.....	3
Oblique over horizontals.....	3
Vertical over horizontals.....	1
Criss-cross over rocker stamp.....	1
Destroyed.....	4
TOTAL.....	169

Rim cross-sections which may be seen on Figure 7 were represented by the following percentages: 37.6 form 1; 16.5 form 3; 14.1 form 4; 12.4 form 7; 2.9 form 8; 2.4 form 9; 2.4 form 12; 1.8 form 14; 1.2 form 22; 1.2 form 19; 1.2 form 25; 1.2 form 31; 1.2 form 28; 1.2 form 26; .6 form 24; .6 form 27; .6 form 29; .6 form 12; and .6 form 30.

Rim thickness ranged from 5 mm to 15 mm with a mean of 8.2 mm.

Rocker Stamped (Plate XIV)

Technique. A square and/or rectangular toothed implement was generally used, although a toothless tool was also occasionally used. As a rule, there is a non-rocker design element directly below the lip and above the rocker stamping.

Motif	%	f
Oblique or vertical pseudo scallop shell or incising above horizontal rocker.	19.5	8
Vertical rocker.....	19.5	8
Oblique pseudo scallop above vertical rocker.....	17.1	7
Vertical rocker over horizontal dentate.....	14.6	6
Oblique rocker.....	12.2	5
Oblique punctate above oblique rocker.....	7.3	3
Oblique dentate over horizontal rocker.....	2.4	1
Oblique dentate over vertical rocker.....	2.4	1
Horizontal rocker with superimposed band of oblique pseudo scallop shell.	2.4	1
Horizontal rocker.....	2.4	1
TOTAL.....	99.8	41

Lip decoration consisted of—

Vertical dentate.....	11
Absent.....	10
Oblique dentate.....	9
Encircling dentate.....	4
Oblique pseudo scallop shell.....	2
Vertical pseudo scallop shell.....	2
Encircling incised.....	1
Punctates.....	1
Vertical incised.....	1

TOTAL..... 41

Interior decoration consisted of—

Absent.....	13
Oblique dentate.....	7
Vertical dentate.....	7
Oblique pseudo scallop shell.....	5
Criss-cross pseudo scallop shell.....	3
Vertical incised.....	2
Oblique dentate over horizontal rocker.....	1
Vertical dentate.....	1
Criss-cross dentate over oblique dentate.....	1
Oblique rocker.....	1

TOTAL..... 41

Rim cross-sections which may be seen on Figure 7 were represented by the following percentages: 41.4 form 1; 17.2 form 3; 13.8 form 4; 10.3 form 9; 6.9 form 7; 3.4 form 19; 3.4 form 8; and 3.4 form 2.

Rim thickness ranged from 5 mm to 11 mm with a mean of 8.3 mm.

Incised (Plate XV)

Technique. The manner of incising was quite variable and ranged from clear, deep incisions to trailing to the use of a toothed implement which was dragged through the clay in such a manner that the tooth impressions were largely obliterated, resulting in an irregular incision.

Motif	%	f
Oblique.....	30.4	7
Criss-cross.....	26.1	6
Chevron over criss-cross.....	13.0	3
Obliques over horizontal dentate.....	8.7	2
Verticals.....	4.3	1
Vertical over horizontal.....	4.3	1
Vertical over criss-cross.....	4.3	1
Chevron.....	4.3	1
Criss-cross over horizontal dentate.....	4.3	1
TOTAL.....	99.7	23

Lip decoration consisted of—

Absent.....	7
Verticals.....	6
Obliques.....	4
Notched.....	3
Vertical dentate.....	2
Punctates.....	1

TOTAL..... 23

Interior decoration consisted of—

Absent.....	11
Vertical.....	6
Oblique.....	3
Vertical dentate.....	2
Chevron.....	1
TOTAL.....	23

Rim cross-sections may be seen in Figure 7 and were represented by the following percentages: 82.6 form 1; 4.3 form 6; 4.3 form 15; 4.3 form 32; and 4.3 form 7.

Rim thickness ranged from 6 mm to 10 mm with a mean of 8.3 mm.

Decorated Lip (Plate XVII, fig. 2)

Decoration was restricted to the lip of the rim with the exception of three instances of oblique dentate on the interior of the rim. Lip decoration was represented by the following: short oblique dentate, 7; encircling dentate, 3; and vertical dentate, 1.

Rim cross-sections were represented by the following percentages: 30.0 form 1; 30.0 form 3; 10.0 form 5; 10.0 form 6; 10.0 form 13; and 10.0 form 15.

Rim thickness ranged from 5 mm to 10 mm with a mean of 7 mm.

Circular Punctate (Plate XVII, figs. 3-5)

Technique. With two exceptions these rims possessed dentate impressions on the exterior. Characteristic of all, however, was the presence of circular punctates produced by impressing a hollow bird bone or reed into the wet clay.

Motif	f
Criss-cross dentate above horizontal punctates.....	2
Two rows of horizontal punctates.....	2
Oblique dentate over horizontal punctate over horizontal dentate over horizontal punctate.....	2
Oblique dentate over horizontal dentate over punctates.....	1
Two rows of punctates over horizontal dentate.....	1
Horizontal punctates superimposed over oblique dentate.....	1
TOTAL.....	9

Lip decoration consisted of the following: absent, 4; oblique dentate, 2; encircling dentate, 2; circular punctate, 1.

Interior decoration consisted of the following: a row of horizontal circular punctate, 2; rows of horizontal circular punctate superimposed over oblique dentate, 2; absent, 2; rocker stamped, 1; horizontal dentate, 1; horizontal circular punctate superimposed over criss-cross dentate, 1.

Rim cross-sections were represented by the following percentages: 44.4 form 1; 33.3 form 13; 11.1 form 4; and 11.1 form 33.

Rim thickness ranged from 7 mm to 11 mm with a mean of 9.1 mm.

Plain (Plate XVII, fig. 1)

These seven rims were characterized by the complete absence of decoration. Rim cross-sections were all of form 1, and rim thickness ranged from 6 mm to 10 mm with a mean of 9.2 mm.

Cord-Malleated Exterior (Plate XVII, fig. 6)

Technique. All three of these rims possessed vertical cord malleation on the exterior. On two specimens the loose cording had been impressed on the lip; the remaining specimen had oblique cord-wrapped stick impressions on the lip as well as exterior punctates which produced interior bosses. In all cases the interior was plain.

The first two rim cross-sections were of form 1; the remaining rim was of form 12. Rim thickness ranged from 6 mm to 10 mm with a mean of 7.7 mm.

Punctated (Plates XVII, figs. 8, 9)

On one rim a triangular punch was impressed below the lip to produce two horizontal rows. The lip possessed the same punch, and three horizontal rows of an ovate punch decorated the interior. The second specimen was randomly decorated with a circular punch. The same technique occurred along the lip, and the interior had a single horizontal row of finger-nail impressions.

Both rims possessed a cross-section of form 2. Rim thicknesses were 11 mm and 10 mm respectively.

Cord-Wrapped Stick Impressed (Plate XVII, fig. 7)

This sherd was decorated with two horizontal lines of cord-wrapped stick impressions below the lip. Beneath the horizontals the same decorative element had been crossed to form rhomboids. Both the lip and the interior were plain, and the rim cross-section was of form 1 with a thickness of 8 mm.

Thong Impressed (Plate XVII, fig. 10)

This single specimen had vertical thong impressions running from directly below the lip to a plain neck. The same impression occurred on the interior, but the lip was plain. The rim cross-section was of form 1 and was 9 mm thick.

Complex Punctate (Plate XVII, fig. 11)

Starting from the lip and extending downward, the rim possessed short, vertical incisions above a short broken row of dentate impressions above a double row of irregular punctates above a number of horizontal

rows of short dentate impressions. The interior was decorated with vertical rocker stamp, and the lip was plain. The rim cross-section was of form 2, and the thickness was 10 mm.

Vinette 1 (Plate XVII, fig. 12)

This single rim sherd conformed to the definition of the Vinette 1 pottery type (Ritchie and MacNeish, 1949:100) in possessing cord impressions on both the exterior and interior of a rim of form 4. The rim was 10 mm thick.

Other Ceramic Traditions Represented at the Site

Iroquois (Plate XVI, figs. 1-3)

Five rim sherds assignable to the Neutral-Wenro pottery types as defined by MacNeish (1952) were recovered from the site. Types represented were—Ontario Horizontal, 2; Middleport Oblique, 2; Ontario Oblique, 1. All these types are characteristic of the Middleport Horizon (Wright, 1960), which is the only Iroquois manifestation known, to date, from Bruce County. Stratigraphically, the rims were recovered from the plough zone or from the partially plough-disturbed stratum resting on the dense, black, undisturbed deposit of the middens.

Rainy River Aspect (Plate XVI, figs. 4-12)

Of major importance was the recovery of nine rim sherds and nineteen body sherds belonging to this western Middle Woodland ceramic tradition. Five of the rims were assignable to the Nutimik Oblique pottery type (MacNeish, 1958; 150-151), and another two rims to the Lockport Linear type (*ibid.*: 145, 150). The remaining two rim sherds did not appear to fall into any of the Manitoba pottery types but definitely belonged to the same tradition. It is of interest to note that although the Lockport Linear type occurs in the earliest ceramic complex of southeastern Manitoba (Anderson Focus), the Nutimik Oblique type is, for the most part, found in the following Nutimik Focus of the same area.

Stratigraphically, the Rainy River Aspect pottery was mixed with the Saugeen Focus material and was present in pits and middens and, in general, was scattered over the site with a slight concentration in Midden A.

Air distance between southeastern Manitoba and the Donaldson site is about 850 miles, and the archaeological survey within this area by the writer has produced an unbroken distribution of relatively homogeneous Rainy River Aspect sites. Suffice it to say that the rim sherds under consideration belong to a Middle Woodland ceramic tradition which extends from the edge of the western prairies along the north shore of the Upper Great Lakes. This matter will be discussed at greater length under "Interpretations."

TABLE 2.—*Rim sherd seriation*

Rim Sherd Category	%	f
Pseudo Scallop Shell.....	38.0	173
Dentate Stamped.....	37.1	169
Rocker Stamped.....	9.0	41
Incised.....	5.1	23
Decorated Lip.....	2.2	10
Circular Punctate.....	2.0	9
Plain.....	1.5	7
Cord-Malleated Exterior.....	.7	3
Punctated.....	.4	2
Cord-Wrapped Stick Impressed.....	.2	1
Thong Impressed.....	.2	1
Complex Punctate.....	.2	1
Vinette 1.....	.2	1
Iroquois.....	1.1	5
Rainy River Aspect.....	2.0	9
TOTAL.....	99.9	455

BODY SHERDS

A total of 3,669 body sherds were analysed for the attributes of decorative technique, surface finish, thickness, and interior channelling or scarification. Because of the minute size, the sloughing off of interior and/or exterior, and the excessive weathering, a large number of sherds had to be excluded from the analysis.

Paste features consisting of temper, texture, colour, hardness, and method of manufacture were relatively homogeneous within the Saugeen Focus sherds and, in general, may be said to closely approximate the paste of Point Peninsula 1 Focus (Early Woodland) sherds. Tempering was represented by large quantities of grit which ranged from .5 mm to 10.0 mm in diameter and appeared to be derived from the weathering granitic cobbles found locally in the till. The texture was coarse with tempering particles usually visible on both the exterior and interior surfaces of the sherds. Numerous small cracks were frequently present on the exterior of the sherds. Colour, for the most part, ranged from buff to orange on the exterior and buff to black on the interior. With regard to hardness, the majority of the sherds were quite soft, and large numbers could not be analysed since the surface decoration had either weathered off or had been scrubbed off during the washing. The method of manufacture was revealed by the numerous coil breaks. Of particular interest was the recognition of the number of ways the aboriginal potter attempted to insure a strong seam between two coils. Besides the normal coil seam, which represented the usual manufacturing method at the site (Plate XVIII, figs. 1-3), two additional techniques to ensure a strong seam were used. One method consisted of building up the vessel by the normal coiling technique until a point was reached where a stronger seam was deemed necessary. The inferior coil surface was then allowed to harden to some extent. Notches from 15 mm to 25 mm apart were then cut into the partially hardened surface of the inferior coil, and when the wet superior coil was

moulded into position, the inferior slots were filled by the more plastic clay, allowing for the simple creation of a mortice and tenon union (Plate XVIII, figs. 4-6). The second method differed only slightly in having shallow finger-tip impressions on the inferior coil rather than cut slots (Plate XVIII, figs. 9, 10). As only a dozen of these unique coil seams were recognized, it may be possible that one or two potters with a leaning toward structural engineering were responsible.

Rocker Stamped (891)

The fact that rocker-stamped rim sherds represented 9 per cent of the total rim analysis and that rocker-stamping is the dominant decorative technique to occur on the body sherds indicates that this particular design element was used to decorate the body of the vessel and not the rim. Using coil breaks for orientation, it was noted that the rocker stamping occurs horizontally, vertically, and obliquely on the body of the vessel, but no accurate quantification is possible. In rare instances the design was made with a toothless implement, otherwise a toothed tool was used.

Dentate Stamped (847)

The square and/or rectangular impressions are quite large, averaging three teeth per centimetre with a range from two to five teeth per centimetre. The tools that made the impressions were apparently made and applied in a careless manner when compared to dentate impressed sherds from the Point Peninsula 2 Focus or Rainy River Aspect. The most common motif is horizontal or vertical lines of dentate stamp, although obliques and criss-cross forming either squares or rhomboids were also present.

Pseudo Scallop Shell (825)

As has been stated earlier, these impressions appear to have been made with a saw-toothed implement impressed sideways into the clay. A wide range of expression is present, but all sherds are characterized by the typical spiral meander. Horizontal, vertical, oblique, criss-cross, and chevron designs are present with emphasis upon the first three motifs.

Plain (373)

Body sherds devoid of all impressions were relatively rare at the Donaldson site when compared to Point Peninsula 2 Focus and Rainy River Aspect ceramics. Also, a small portion of the sherds almost certainly represents fragments from Iroquois vessels.

Incised (167)

The majority of these sherds appear to have vertical lines which converge toward the pointed base. Horizontal incising appears to be rare or absent, although such information is difficult to derive from small sherd fragments. Other motifs consist of obliques and criss-cross forming rhomboids. Generally, the incisions are deep and are poorly executed with regard to geometric symmetry.

Pseudo Scallop Shell and Incised (156)

In virtually every case this motif is represented by vertical or oblique incising superimposed over horizontal lines of pseudo scallop shell.

Channelled Exterior (54)

The surface of the sherds appears to have been wiped with a handful of grass to produce the shallow vertical or horizontal lines so common on the interior of Point Peninsula sherds and represented on the interiors of less than 7 per cent of the Donaldson site sherds. It may also be noted that this category also possesses the highest incidence of interior channelling.

Cord Malleated (50)

These sherds are characterized by the vertical application of loosely twisted cording, probably wrapped around a paddle. In a minority of the sherds, secondary wiping has almost obliterated the cord impressions.

Thong Impressed (47)

It appears that the sherds had been impressed with a thong-wrapped paddle. The impressions frequently overlap one another and are usually quite deep.

Circular Punctate (36)

The circular punctations were made with the end of a hollow bone or reed and range from 7 mm to 15 mm in diameter with a mean diameter of 9 mm. They are superimposed over plain, dentate stamped, and rocker stamped body sherds.

Rainy River Aspect Body Sherds (19) (Plate XIX, figs. 4-6)

These sherds are much thinner and better fired than the usual sherds recovered from the site. The decoration of fourteen sherds consists of closely spaced rows of closely spaced vertical incisions or impressions usually 6 mm in length. Coil breaks indicate that the rows may occur horizontally or vertically. Other motifs consist of horizontal rows of complex dentate, closely spaced horizontal rows of push-pull, rows of short oblique pseudo scallop shell impressions associated with a double row of exterior punctates, and fine dentate stamping associated with exterior punctates. A red ochre wash is present on three of the sherds.

Dentate and Incised (15)

The most common motif consists of vertical or slightly oblique incising superimposed over horizontal dentate impressions. In one case, incised criss-cross overlies horizontal dentate.

Checkered (15)

The large rectangular check marks of these sherds appear to have been made with a griddle-faced paddle. Dimensions of the rectangles are roughly 7 mm by 4 mm but are frequently difficult to determine owing to later wiping of the surface which partially obliterated the impressions. Although the impressions are very similar to those found on early Iroquois sherds, the general paste features and the presence of coil breaks suggest that they belong with the Saugeen Focus ceramic complex.

Irregular Dentate (14)

Characteristic of these sherds are irregular dentate impressions (oblong, crescent, triangular) which frequently had been applied in a haphazard fashion resulting in an irregular mass of dentate impressions.

Pseudo Scallop Shell and Rocker Stamped (13)

The majority of these sherds were initially decorated with horizontal or vertical rocker stamping over which vertical or oblique pseudo scallop shell impressions were made.

Vinette 1 (10) (Plate XIX, figs. 1, 2)

The presence of cording on both the interior and exterior of these sherds identified them as Vinette 1 (Ritchie and MacNeish, 1949:100). All the sherds were recovered from the Burial Area, although they appear to represent at least four vessels.

Punctated (9)

This category represents a "catch-all" grouping with all the sherds being characterized by non-boss producing punctates of circular, teardrop, or irregular shape.

Finger-Nail Impressed (5)

All the sherds possess parallel rows of usually closely spaced finger-nail impressions. In addition, one sherd has exterior circular punctates which produce slight interior bosses.

Complex Dentate (5)

It is difficult to determine exactly how the impressions on these sherds are produced. The impression is that an especially manufactured multi-toothed implement was used.

Rócker Stamped and Incised (4)

These sherds possess combinations of the two decorative techniques.

Rocker Stamped, Pseudo Scallop Shell and Incised (2)

All three decorative techniques occur on these two sherds.

Incised and Dentate (2)

On both specimens dentate stamping occurs superimposed over incising.

Net Impressed (1)

This single sherd bears a loose net impression on the exterior and cord impressions on the interior. In all features except the exterior it resembles Vinette 1 sherds.

Dentate and Rocker Stamped (1)

Both techniques occur on this sherd.

Dentate and Pseudo Scallop Shell (1)

Both decorative techniques occur on this sherd.

Fabric Impressed (1)

The impression on this sherd appears to be a fabric, but the specimen was in too crumbled a state to derive further information.

Zone Stamped (1) (Plate XIX, fig. 3)

This sherd possesses a thin, curvilinear incision, inside of which a single line of dentate stamp occurs. The remainder of the sherd is plain.

Basal Sherds (105) (Plate XIX, figs. 10, 11)

Basal sherds include all those pottery fragments which either represent the basal tip of the vessel or the sides of the base which show a marked increase in thickness as the base is approached. Where the fragments are sufficiently complete, it was seen that bases range from sharply conoidal to a shallow sub-conoidal form approaching a globular base. Only fourteen of the sherds are undecorated. Pseudo scallop shell and rocker stamping are the major decorative techniques, although dentate stamping and incising are also present. Actual vertical thickness of the base, measuring from the exterior tip to the equivalent interior point, could be made on eight sherds and ranged from 13 mm to 20 mm with a mean of 16.6 mm.

Table 3 presents the basic comparative data derived from the body sherd analysis.

TABLE 3.—*Body sherd seriation*

Category	f	%	Channel- ling f	Thickness	
				Range (mm)	Mean
Rocker Stamped.....	891	24.3	57	5-14	9.3
Dentate Stamped.....	847	23.1	54	5-16	9.3
Pseudo Scallop Shell.....	825	22.5	68	4-15	9.8
Plain.....	373	10.2	24	5-16	9.3
Incised.....	167	4.6	12	6-13	9.5
Pseudo Scallop Shell and Incised....	156	4.3	4	6-14	9.6
Channelled Exterior.....	54	1.5	15	6-13	9.2
Cord Malleated.....	50	1.4	1	6-13	9.5
Thong Impressed.....	47	1.3	3	5-14	8.8
Circular Punctate.....	36	1.0	3	8-12	9.9
Rainy River Aspect.....	19	.5	—	6-9	6.8
Dentate and Incised.....	15	.4	3	9-13	10.9
Checkered.....	15	.4	—	7-11	9.3
Irregular Dentate.....	14	.4	—	7-12	9.7
Pseudo Scallop Shell and Rocker Stamped.....	13	.4	2	7-13	9.8
Vinette 1.....	10	.3	—	8-13	10.0
Punctated.....	9	.2	1	5-11	8.6
Finger-nail Impressed.....	5	.1	1	8-10	9.0
Complex Dentate.....	5	.1	2	7-10	8.2
Rocker Stamped and Incised.....	4	.1	1	7-11	8.8
Rocker Stamped, Pseudo Scallop Shell and Incised.....	2	.05	—	8-10	9.0
Incised and Dentate.....	2	.05	—	5-10	7.5
Net Impressed.....	1	.03	—	—	10.0
Dentate and Rocker Stamped.....	1	.03	—	—	9.0
Dentate and Pseudo Scallop Shell....	1	.03	—	—	9.0
Fabric Impressed.....	1	.03	—	—	10.0
Zone Stamped.....	1	.03	—	—	10.0
Basal Sherds.....	105	2.9	—	13-20	16.6
TOTAL.....	3,669	100.3	251		

JUVENILE AND WASTE CERAMICS

(Plate XIX, figs. 7-9)

Every ceramic site the writer has excavated has produced fragments of small crudely constructed vessels. These have been called seed-pots, toy pots, and model pots, with the implied function of a seed container, a toy, and a model for a larger vessel. Wintenberg (1948: 10), on the other hand, has suggested that these fragments were the product of "persons inexperienced in pot making." The writer is fully in accord with this statement and regards the fragments as the immature handiwork of children learning the ceramic art. When sufficient specimens are available, the evolution of ceramic maturity can be seen to range from the initial plain balls of clay with a central impression to fragments which blend into the "adult" ceramics. Both vessel form and decorative motif are frequently used in a "non-traditional" manner which partially reflects the individual child's expression. As familiarity with plastics and a greater awareness of the culture's aesthetic values increase, the form and motif attributes become increasingly traditional and largely lose their individual character. A dozen such fragments were recovered at the Donaldson site.

The odd coil fragment and flattened pieces of tempered and fired clay were regarded as the waste products of pot manufacture.

LITHIC ANALYSIS

The lithic complex at the site was weak relative to the abundance of ceramics. Flaked material appears to be largely derived from local cherts, quartz, quartzite, and slate, which are prevalent in the till. A small proportion of the chert appears to have come from the Port Franks deposit (Jury and Jury, 1949) 85 miles to the south of the site on the Lake Huron shore. No doubt a number of the flint specimens would be indicative of trade relations if their origins were known.

PROJECTILE POINTS

(Plate XX, figs. 1-12)

Although only eight of the projectile points recovered were complete, an additional nine specimens could be analysed. Although this total of seventeen specimens is certainly too low to establish a point typology, certain varieties are noted that may be characteristic of the Saugeen Focus. Table 4 lists the data regarding the points.

SCRAPERS

(Plate XX, figs. 13-24)

A total of 79 scrapers were recovered from the site, most of which were flake scrapers and end scrapers. Flake scrapers are random flakes that have had one to two edges bevelled to produce the characteristic scraping edge. Of the 29 examples of this grouping, 23 have a single scraping edge, and six possess two scraping edges. Total length of these modified edges range from 8 mm to 34 mm with a mean of 18.2 mm.

End scrapers are flakes that have one end predominantly bevelled. The scraping edge is usually convex, and flakes are frequently trianguloid

TABLE 4.—*Projectile point data*

Variety	f	Length		f	Basal Width		f	Notch Depth		f	Thickness		f
		R	$\bar{x}$		R	$\bar{x}$		R	$\bar{x}$		R	$\bar{x}$	
		mm	mm		mm	mm		mm	mm		mm	mm	
Corner-notched...	5	38-61	49.5	2	18-24	21.5	4	2-6	4.4	5	6-10	7.8	4
Side-notched...	6	41-51	46	2	18-24	20.2	5	2-4	2.7	6	5-8	5.6	5
Trianguloid...	3	28-65	45.3	3	18-24	20.3	3	—	—	—	5-7	5.7	3
Expanding stem ¹	2	—	—	—	18-19	18.5	2	—	—	—	—	6	1
Contracting stem.....	1	—	64	—	—	—	—	—	—	—	—	10	1

¹ Basal and lateral grinding present on both expanding stem points.

with the bulb of percussion at the opposite end of the flake from the scraping edge. All have a plano-convex cross-section. Forty-two specimens have artificial bevelling at one end only; three possess bevelling along both sides as well as at the end; and one specimen has bevelling at one end and along one edge. Total length of the modified edges ranges from 10 mm to 28 mm with a mean of 18.7 mm.

Stemmed scrapers were represented by two corner-notched specimens, which may represent reworked projectile points.

Two unusual "hump-backed" scrapers were also present, and though they appear to be a variety of end scraper, the entire edge of the artifact has been steeply flaked. Both are plano-convex in cross-section and have a thickness of 15 mm and 11 mm.

BLADES

(Plate XXI, figs. 1-5)

Only three complete bifaces and five fragments of bifaced blades were found. The three complete blades are quite crude ranging from 8 mm to 10 mm in thickness with a mean of 9 mm. One specimen shows extensive battering around the edges and may have functioned as a strike-a-light. A random flake also has one edge modified in a bifacial manner and may have functioned as a knife.

Two flake-blades struck from a polyhedral core of an apparently foreign chert were also present. They measured 41 and 34 mm long and 11 and 10 mm wide respectively.

CORES

(Plate XXI, figs. 6-12)

Six varieties of cores were noted: rectangular, 16; irregular, 13; pebble, 9; bi-polar, 9; uni-polar, 7; and polyhedral-like, 2.

Rectangular

These cores are characteristically rectangular to square in outline with flakes having been removed from four or three sides. Dimensionally, they range from 40 mm long and 32 mm wide to 15 mm long and 14 mm wide with a mean length and width of 22.3 mm and 19.1 mm respectively.

Irregular

As the name indicates, these cores exhibited no characteristic form and appear to represent the wastage of random flake removal. Some may well represent fragments of a more definite core variety.

Pebble

In all cases a substantial portion of the original pebble surface has survived a random process of flake removal.

Bi-Polar

The major attribute of this variety is that flakes have been predominantly struck from the opposing ends of the long axis of the core. The cores are usually rectangular in shape and may range from a length of 33 mm and a width of 13 mm to a length of 20 mm and a width of 8 mm. The mean length is 23.7 mm and the mean width is 14.3 mm.

Uni-Polar

This variety is differentiated from the previous form in that flakes have been predominantly struck from one end only, a form of flake removal that frequently resulted in a triangular-shaped core with the apex of the triangle representing the striking point. Lengths range from 17 mm to 30 mm with a mean of 23.3 mm, and widths range from 8 mm to 21 mm with a mean of 14.1 mm.

Polyhedral-like

It was felt necessary to attach the qualification "like" to these cores, inasmuch as only two acceptable blades were recovered. Both cores, however, do exhibit a marked attempt to remove long, linear flakes. Whether the resultant flakes would be acceptable as blades is unknown.

ROUGH STONE

Choppers (Plate XXI, figs. 13, 14)

Ten artifacts were regarded as choppers, four of which were complete. The inferred chopping function, however, does not necessarily apply to all these artifacts, as some may represent the initial stage of celt manufacturing. One complete specimen and four fragments still retain a portion of the original surface of the cobble from which they were constructed. Of the

four complete specimens, two are ovate acuminate and two are rectangular. Seven specimens are bifacially percussion flaked; two possess primary flaking on one face, but the other face retains the original cobble surface; and one large squarish cobble fragment has been percussion-flaked at one end to produce a sinuous edge. With the exception of two crystalline specimens, material used in their manufacture is green quartzite and slate.

Scraping Planes

Three artifacts possessing a plano-convex cross-section and one steeply retouched edge are regarded as scraping planes. Two specimens are of green quartzite and retain the original cobble surface on the convex face. The remaining specimen is a very chalky chert.

Knife Scraper Spalls (Plate XXI, fig. 15)

These artifacts are represented by a single spall, usually ovate in shape, which has been struck off a quartzite or slate cobble. The detaching point of percussion is clearly visible at the thick edge. In cross-section the flake forms a sharp wedge with one face representing the cobble surface. Five of the seven flakes are complete, and two of these possess retouch along the edge opposite the point of percussion.

Knives (?)

Two thin bifacially flaked slate artifacts may represent knives as they appear to be too thin (10 mm) to have functioned as choppers.

Saw(?)

A single slate flake possessing serration along two edges has been interpreted as a possible sawing tool.

General Flaking Detritus

For greater convenience the general flaking detritus was separated into cores and flakes and roughly as to material, and it was then weighed. The non-flint material was largely green quartzite, slate, and quartz. Table 5 presents the results. Non-flint flakes consisted of much larger fragments.

TABLE 5.—*Chipping detritus*

Material	Weight	
	lb.	oz.
Flint flakes.....	4	7
Flint cores.....		14
Other flakes.....	11	9
Other cores.....	1	

Celts (Plate XXII, fig. 7; Plate XXIII, figs. 3, 4)

A number of artifacts which were regarded as finished and unfinished celts were recovered. Twelve fragmented and two complete specimens had been shaped by flaking a natural linear river cobble. The artifacts had then been further modified by varying degrees of pecking. Grinding was absent, and in this respect if some of the specimens are to be regarded as finished, then they would appear to represent an intermediate position between the chopper and the true celt. Four poll sections had been completely polished. Three surviving polished bit fragments all represent adzes as defined by the bevelled asymmetric lateral cross-section. Two complete rectanguloid specimens had been so battered at the bit that they cannot be differentiated as axes or adzes. The single small, and apparently complete, chisel possesses a symmetrical bit.

HAMMERSTONES

(Plate XXIII, fig. 1)

Hammerstones were quite abundant at the site, and though all appear to consist of an unmodified pebble, the subsequent method of hammering resulted in a number of varieties.

Faceted (7)

These artifacts are characterized by two to six adjoining hammering facets, which could be located at one or two ends of the artifact. In all cases the facets are clearly defined with sharp ridges separating them. The average number of facets is 3.7.

Circular (7)

All these specimens are characterized by a continuous hammering face or faces which entirely encircle the artifact leaving two unmodified sides by which the tool was held.

Irregular (7)

As suggested by the name, these specimens are irregular cobbles that have been hammered at one to three separate loci.

Flake (5)

In all cases the sharp edge of a heavy igneous or metamorphic rock flake had been blunted by use in the hammering process.

Fragmented (5)

Both split specimens and flakes from a striking facet are represented.

ANVIL STONES

(Plate XXIV)

The eight anvil stones recovered varied from rectanguloid to circular in shape. Combinations of pits and hammering faces to occur consist of a pit on both faces and hammering at both ends and edges; a pit on both faces

and one on an edge and hammering at both ends; one or two pits on one face and no evidence of hammering; a pit on one face and a pit on both edges with hammering on two corners; a pit on both faces and on all four edges with hammering on all edges; a pit on one face and on one edge and hammering on both ends.

ABRADERS

(Plate XXII, fig. 8)

Ten relatively complete abraders and seventeen fragments were found. With the exception of a single schistose specimen, all the abraders were of a silty sandstone which was also frequently fissile. Only one rectangular specimen appears to have been purposely shaped; the remainder were largely unmodified fragments.

MANOS

(Plate XXII, fig. 9)

Two complete manos were identified. The rectanguloid specimen shows use along one face and one edge, whereas the ovate specimen has evidence of grinding on both faces. Both of these specimens are of crystalline rock.

METATE

(Plate XXIII, fig. 2)

A single fragmented sandstone metate has a deep dished-out concavity on one face.

GORGETS

(Plate XXII, figs. 2-4)

One gorget blank and five gorget fragments were recovered. The blank definitely appears to conform to the butterfly type of gorget. The other specimens represent fragments of rectangular gorgets. Two have bi-convex drilled holes, and shallow drill indentations decorate both faces of another. All the specimens were manufactured from varieties of slate.

NET-SINKERS

(Plate XXII, fig. 6)

A single end-notched net-sinker came from the site.

BIRDSTONES

(Plate XXII, fig. 1)

An unfinished slate birdstone was recovered from the surface of the site.

MISCELLANEOUS STONE ARTIFACTS

An elliptically shaped stone, rich in micaceous minerals, may represent some form of pendant. A single fragment of sawed or abraded schist probably represents wastage.

MISCELLANEOUS

NATIVE COPPER

(Plate XXV, figs. 10-14)

A small well-formed axe, a punch, a flat rectangular cross-sectioned awl, two tubular bead fragments, and a short rod represented the entire recovery of copper from the site, exclusive of the burials.

BONE

(Plate XXV, figs. 1-8)

Artifacts made of bone and antler were extremely sparse, and since bone preservation was excellent, no physical explanation for this paucity is possible.

Rodent Incisor Tools

These artifacts were usually manufactured from beaver incisors, but occasionally a smaller rodent incisor was used. Five incisors had been broken off less than an inch from the bit edge of the incisor. Except for some faceting, no marked evidence of actual bit-edge modification is observable. To produce a sharp point at the outside edge, two incisors had been split longitudinally and bevelled laterally. A single incisor had the buccal surface removed and both edges bevelled to produce a sharp point.

Awls

Three tip fragments of bone awls and three fish bone needles or awls were recovered.

Miscellaneous

A single antler barbless socketed harpoon with a gouged line hole was found. A long splinter of cannon bone, which had been ground along one edge, may possibly represent a knife or flesher. A small fragment of bone possessed a double row of closely spaced notches. One fragment of antler which exhibited cutting and breakage marks, may be regarded as a fragment of wastage. One small fragment of polished bone might represent the mid-section of an awl.

Bone Refuse Data

Mammal remains were relatively scarce at the site, and recognized species consisted of deer, beaver, bear, and moose. These remains were identified by Mr. P. M. Youngman of the Museum staff.

Reptile remains recognized by the writer were restricted to turtle. Table 6 presents the fish remains data acquired by Mr. D. E. McAllister of the Museum staff.

TABLE 6.—*Fishbone analysis*

Species	Weight of remains	Spawning Habits
White sucker (<i>Catostomus commersonii</i>).....	3 gm	spring stream spawner
Sucker (probably <i>Catostomus commersonii</i>).....	17 gm	
Lake sturgeon (<i>Acipenser fulvescens</i>).....	565 gm	spring or early summer in streams or lakes, often in streams.
Channel catfish (<i>Ictalurus punctatus</i>).....	4 gm	May-June spawner
Freshwater drum (<i>Aplodinotus grunniens</i>).....	49 gm	May-June spawner
Yellow perch (<i>Perca flavescens</i>).....	2 scales	
Bass (<i>Micropterus</i> ?).....	1 gm	
Yellow walleye (<i>Stizostedion vitreum</i> -?).....	35 gm	

Shell Refuse Data

Two shell fragments from the general refuse were identified as *Elliptio* (*delatatus*?) and *Lasmigona* (*cestata*?), and shell beads from the burial as *Marginella apicina* Menke by Dr. Arthur Clarke, Jr., of the Museum staff.

Historic Materials

A small amount of pioneer and more recent white material was recovered from the plough zone. These pieces consisted of hand-wrought iron nails, a fragment of a steel trap, china and glass fragments, kaolin pipe bowl and stem fragments, and miscellaneous unidentified objects.

CHAPTER III

COMPARISONS

Two other sites that the writer would assign to the Saugeen Focus have been reported upon. These are the earliest component of the Burley site (Jury and Jury, 1952) and the Inverhuron site (Kenyon, 1959) or Lucas site (Lee, 1960). Only the sample obtained by Kenyon is large enough to allow certain pertinent quantitative comparisons with the Donaldson site. Although the Inverhuron and Lucas sites are, in fact, one and the same, which contains four components partially isolated on raised beach lines, any attempt to lump the Middle Woodland materials recovered and analysed independently by Kenyon and Lee was felt to be hazardous. The two reports on the same component are, therefore, regarded separately.

Considering ceramics, first it is noted that Kenyon obtained 37 analysable rim sherds and 469 body sherds, of which 94 are described as miscellaneous. Twenty-four of the rim sherds, those used to establish the pottery type Inverhuron Dentate (Kenyon, 1959:18), are characterized by oblique or vertical dentate stamping above horizontal dentate stamping or, more rarely, just horizontal lines of dentate stamping. Sixty-two rims from the Donaldson site are identical to this type and represent 13.6 per cent of the rim sherd total, as opposed to a representation of 63.1 per cent at the Inverhuron site. Also of note is the absence of pseudo scallop shell impressed rims, which represented the major rim sherd category at the Donaldson site. The remaining thirteen rim sherds consist of three dentate stamped, one rocker stamped, one incised, one punctated, one cord-wrapped stick, and one fabric or cord impressed, and may be duplicated within the Donaldson site sample.

An example of the Inverhuron Dentate pottery type is illustrated in Lee (1960, Plate III, fig. 16), and a rim sherd from the Burley site may also belong to this type (Jury and Jury, 1952, Plate IX).

Table 7 gives the comparative data from the Inverhuron and Donaldson sites with reference to analysed decorated body sherds.

TABLE 7.—*Donaldson site and Inverhuron site body sherd comparisons*

Body sherd treatment	Inverhuron		Donaldson	
	f	%	f	%
Dentate Stamped.....	307	82.3	847	23.1
Incised.....	36	9.7	167	4.6
Rocker Stamped.....	27	7.2	891	24.3
Cord-Wrapped Stick.....	2	.5	—	—
Push-Pull.....	1	.3	—	—
TOTAL.....	373	100.0	1,905	52.0

It will be noted that the Donaldson list is only partial and that only the sherd varieties present at the Inverhuron site are used for comparison. By referring to Table 3, where the complete list of body sherd treatment at the Donaldson site is presented, some marked disparities between the two sites, besides those illustrated in Table 7, may be seen. Perhaps most critical is the absence of pseudo scallop shell at the Inverhuron site; whereas at the Donaldson site it was a major decorative technique. The same disparity was noted with reference to the rim sherds from the two sites. That some pseudo scallop shell was present at the Inverhuron site is illustrated in Lee (1960, Plate III, figs. 17-19). It is assumed that some of these sherds occur under the miscellaneous category of Kenyon's report. Only two of the Inverhuron site body sherds are plain, as opposed to 373 or 10.2 per cent plain body sherds at the Donaldson site. Another difference between these two sites is the treatment of the vessel interior. Of 324 body sherds from the Inverhuron site 112 possess interior dentate stamp, 103 have channelling or horizontal striae, and 109 are plain; whereas, at the Donaldson site the interior dentate stamp impressions are absent, and only 251 sherds possess channelling, as opposed to 3,118 plain interiors. Manufacturing techniques and vessel form are basically the same at both sites. A random sample of 250 body sherds from the Inverhuron site had a mean thickness of 10.24 mm and a range of 6 mm to 14 mm. This is fairly close to thickness measurements made on 3,545 body sherds from the Donaldson site which had a mean of 9.34 mm and a range of 4 mm to 16 mm.

Of the 433 body sherds examined by Lee (1960:41) 45.5 per cent were decorated as follows: "criss-cross trailing (44.2%); dentate stamp (36.9%); rocker stamp (14.5%); punctates (4.4%)." Surface treatment of the remaining 236 body sherds consisted of 87 per cent plain; 6.7 per cent thong-marked; 5.9 per cent cord-marked; .4 per cent grooved paddle. Hardness is reported to range from 3 to 5.5 with 54.5 per cent of the sherds falling at 3.5 and "body sherd thickness ranges from 6.5 mm to 16 mm, with 72.2 per cent at 9.5 mm, 21.8 per cent at 13 mm."

The earliest component at the Burley site (Jury and Jury, 1952) produced 56 sherds, 11 of which were rim sherds. The rim illustrated on Plate IX, as was stated earlier, appears to be assignable to the Inverhuron Dentate pottery type (Kenyon, 1959:18). With regards to paste and decorative attributes the Burley site ceramics fall well within the range of the Saugeen Focus with the exception of a single unique rim sherd to which a Hopewell origin is inferred. With the single exception of this rim, the pottery was decorated with the crude dentate stamp, so characteristic of Saugeen Focus ceramics. Dentate stamp or channelling occurred on the interior of the sherds. As it was succinctly stated by the authors (Jury and Jury, 1952:70): "This pottery is early Woodland with features typical of Vinette 1 and Vinette Dentate in the Point Peninsula series. In tempering, texture, and colour it approaches Vinette 1; in surface finish and in design and technique it follows the diagnostic features of Vinette Dentate."

The non-ceramic artifacts from the Inverhuron/Lucas site also bore a close resemblance to material from the Donaldson site. This may be seen in the crude side- and corner-notched projectile points, the dominance of

end or thumb-nail scrapers over other varieties, the end-notched net-sinkers, the celt and chopper forms, the hammer and anvil stone forms, longitudinally split and laterally ground at the bit, beaver incisors, and the limited use of native copper. The sparse lithic artifacts from the first occupational level of the Burley site also compare favourably with the Inverhuron/Lucas and Donaldson sites. These consist of notched net-sinkers (predominantly end-notched), hammerstones, whetstones, and scrapers. An iron pyrites strike-a-light is unique to this site. More general similarities between these sites are seen in the evidence of fishing as a major activity, the weakness of the lithic industry relative to the ceramic complex, the dominant use of local stone, and the abundance of firestones. A similarity is also seen in the type of hearth-pit or "fire-pit" encountered both at the Donaldson and Burley sites.

The differentiation of the Saugeen Focus from other Early and Middle Woodland complexes is, for the most part, based upon the ceramic complex. Such an emphasis upon ceramics has been criticized by Carpenter (1953:75) with reference to Iroquois studies in that "there is no evidence that ceramic traditions were dominant themes in Iroquois culture or that they were particularly sensitive indices of that society's history." Since the above statement could also be applied to the present study, a few observations on the role of ceramics in the Saugeen Focus are deemed necessary. First, ceramics represent by far the most dominant trait in the Saugeen Focus. Second, of all the traits in the Saugeen Focus, ceramics possess the greatest number of quantifiable attributes thus increasing their sensitivity to time and space fluctuations. In short, ceramics are used here (and in Iroquois studies) as the best means to establish a time-space framework, and no inferences concerning the dominant ethnological themes of the culture are intended.

Pottery belonging to the Saugeen Focus cannot be inserted into either the Point Peninsula Focus rim sherd seriation (Ritchie and MacNeish, 1949) or the Rainy River Aspect pottery types, as defined for the Anderson and Nutimik foci (MacNeish, 1958). Similarities do exist between the pottery of the Point Peninsula Focus and that of the Saugeen Focus; however, the writer feels that the inclusion of the latter's rim varieties into the Point Peninsula seriation ignores certain qualitative and quantitative differences and would only serve to cloud the issues at hand. Lee (1960:49) would disagree with this view since he feels that the Vinette Dentate, Vinette Complex Dentate, Point Peninsula Rocker-Stamped, Point Peninsula Plain, and Point Peninsula Corded pottery types of the Point Peninsula Focus could be applied to the Saugeen Focus ceramics. J. B. Griffin (in Jury and Jury, 1952:70) and Kenyon (1952:21), while noting the similarities of one of the Saugeen Focus rim varieties to the Vinette Dentate pottery type, feel that the differences in paste and execution are too great to allow its inclusion into the Point Peninsula pottery type. That such pottery typing controversies can arise illustrates the basic genetic relationship between the Saugeen and Point Peninsula 2 foci.

Point Peninsula 2 Focus ceramics differ from those of the Saugeen Focus in paste and in certain motif and technique attributes. With regard to paste the Point Peninsula 2 Focus sherds are usually more closely knit

with fewer tempering particles showing on the exterior or interior of the sherd. The sherds are thinner, as illustrated by the examination of 596 sherds from the Kant site (Emerson, 1955) where a mean thickness of 8.3 mm and a range of 4 mm to 13 mm were obtained as opposed to a mean thickness of 9.3 mm and a range of 4 mm to 16 mm on 3,545 body sherds from the Donaldson site and a mean thickness of 10.2 mm and a range of 6 mm to 14 mm on 250 body sherds from the Inverhuron site. Tempering in Point Peninsula 2 Focus sherds ranges from 1 mm to 3 mm in diameter (Ritchie and MacNeish, 1949:100), as opposed to a range of .5 mm to 10 mm in the Saugeen Focus sherds. The two critical factors, which exclude a number of the Saugeen rims from the Point Peninsula rim sherd seriation, are the crude decorative techniques and their application on a crude paste. As a rule, the impressing tools of the Saugeen Focus are larger and more crudely constructed than those found in the Point Peninsula Focus. Crudity is a difficult term to quantify, yet it has been a significant factor in differentiating the Saugeen pottery from the Point Peninsula pottery. This is illustrated in statements of earlier workers:

"Dr. James B. Griffin, Director of the Museum of Anthropology at the University of Michigan, examined the Burley material, and it is his opinion that 'while resembling Vinette Dentate stamp it is not good Vinette which is usually thinner and smoother and, as a result of the use of different clay, compact'" (Jury and Jury, 1952:70).

"Certainly the Inverhuron ware is coarse, crude, and very poorly made when compared with the delicately executed Vinette Dentate of New York State" (Kenyon, 1959:21).

The decorative motif frequently extends only part way down the surface of the Point Peninsula vessel with the lower portion being left plain. This condition is noted at the Kant site (Emerson, 1955:37) where 30.5 per cent of the sherds are plain. However, plain body sherds represent only 10.2 per cent of the body sherd analysis at the Donaldson site and .4 per cent at the Inverhuron site. Although the range of motif is broad in both the Saugeen Focus and the Point Peninsula 2 Focus, there does appear to be marked differences in the popularity of certain motifs. One or more rows of obliques and one row of obliques over horizontals are dominant motifs in both foci. Criss-cross motifs, however, appear to be far more common in the Saugeen Focus. Also, the combination of two decorative techniques, especially the superimposing of incised vertical lines over the original motif, is relatively common on Saugeen Focus ceramics but rare on Point Peninsula 2 Focus sherds.

A comparison of the non-ceramic traits reveals certain quantitative and qualitative differences between the two foci under consideration. The projectile points from the Saugeen Focus resemble Early Woodland varieties such as Meadowood and Adena points (Ritchie, 1961:1, 35), whereas others have their closest resemblances in the Late Archaic and the Central Basin Phase. Point Peninsula 2 Focus varieties such as Jack's Reef Pentagonal and Jack's Reef Corner-Notched (ibid.:26-28) are absent, as might be expected. Also projectile points are far more abundant in the Point Peninsula sequence. This is, perhaps, best illustrated by the ratios of projectile points to sherds. At the Kant site (Emerson, 1955), a Point Peninsula 2 component, the ratio is one projectile point to 27 sherds and at the

Malcolm site (Dailey and Wright, 1955), a Point Peninsula 4 component, the ratio is one projectile point to 23 sherds. In contrast, the ratio at the Donaldson site is one projectile point to 243 sherds, and at the Inverhuron site it is one projectile point to 175 sherds. In this same vein it may be stated that the lithic and bone industries of the Point Peninsula 2 Focus are far more developed relative to ceramics than is the case with the Saugeen Focus. Although examples of all the major lithic and bone artifact varieties in the Saugeen Focus can be found in the Point Peninsula 2 Focus, there are a number of traits present in the latter but absent in the former. Outstanding among these negative traits are stone pipes (platform and tube), cache blades, perforated bone needles, flakers, multiple unilaterally and bilaterally barbed harpoons.

Burial practices within the Point Peninsula 2 Focus (Ritchie, 1944, 1955) exhibit far greater variety than noted, to date, in the Saugeen Focus. Primary burial (Wray and René Menard Bridge sites), cremation burial (Jack's Reef, Pickins, and Muskalonge Lake sites), ossuary bundle and cremation burial (Point Peninsula site), and ossuary bundle burial (Northrop site) are all represented. The relative abundance of grave goods is also characteristic, although exceptions, such as the Kant site, do occur.

As has been stated earlier, the Saugeen rim sherd varieties cannot be inserted into the rim sherd typology established by MacNeish (1958) for the Anderson and Nutimik foci of the Rainy River Aspect. Major paste differences are present with the western Middle Woodland pottery being well knit with few tempering particles showing on the interior or exterior of the sherds. Tempering ranges from .05 to 6 mm with a mean of 2 mm. The sherds are thinner, ranging from 5 mm to 14 mm in thickness with a mean of 8 mm. In the Anderson Focus, dentate stamp, linear punctate, and cord-wrapped paddle edge are the major decorative techniques, and though these techniques persist into the later Nutimik Focus it is four new decorative techniques and an increase in the cord-wrapped paddle edge technique that account for much of the pottery. The new techniques are smoothing with a red ochre wash, knotted net impressions, incising, and pseudo scallop shell impressions. Decoration is confined to the upper one-half or one-quarter of the body in both of these foci leaving the remainder of the vessel plain. The most common motifs are horizontals, obliques or verticals over horizontals, and verticals. A common attribute found in these ceramics is exterior punctates that do not produce interior nodes. The Laurel Focus of northeast Minnesota (Wilford, 1955) produces ceramics very similar to the Anderson and Nutimik foci. For example, rim sherd decoration is represented by 32.3 per cent dentate stamp and pseudo scallop shell impressions, and 39.4 per cent push-pull or linear punctate. Also 98.7 per cent of the body sherds are plain.

A survey carried out by the writer in northwestern Ontario in 1960 and 1961 revealed a continuous distribution of sites assignable to the Rainy River Aspect, from southeast Manitoba along the north shore of Lake Superior to Manitoulin Island and into the Bruce Peninsula of southwestern Ontario. Sherds from these sites differ from those of the Anderson and Nutimik foci of southeast Manitoba in that they are largely assignable to two of the Manitoba pottery types, Lockport Linear and Nutimik Oblique. Corded impressions of any kind are virtually absent.

Though the ceramics of the Rainy River Aspect share a number of decorative techniques and motifs with the Saugeen Focus, major differences in paste attributes—the presence of linear punctate, exterior punctating, and certain motif configurations in the former—allow for a clear separation of the two ceramic complexes.

Non-ceramic similarities between the foci of the Rainy River Aspect and the Saugeen Focus are limited. The socketed antler harpoon of an elongated cone-shape with a line hole near the end of the socket is a common artifact in the Laurel Focus (Wilford, 1955:134), and a single specimen was found at the Donaldson site. The beaver incisor tool, made by the oblique removal of the front-distal end of the incisor to form a sharp point, represents another trait held in common. More striking, however, are some of the negative traits. For example, polished stone artifacts appear to be largely absent from the Rainy River Aspect. Projectile points are smaller (MacNeish, 1958:101, 102) and are represented by the following varieties: corner-notched and stemmed (Anderson Focus); corner-notched, stemmed, and side-notched (Nutimik Focus); and stemmed (Laurel Focus). The relative abundance of scrapers, especially the end or thumb-nail variety, is far greater in the Rainy River Aspect.

Although a number of basic differences allow the separation of the Saugeen Focus, Point Peninsula 2 Focus, and the Rainy River Aspect from one another, there are certain similarities which suggest that all these complexes are genetically related. These similarities are—the use of certain decorative techniques such as pseudo scallop shell and dentate and rocker stamping, decorative motifs such as obliques or verticals over horizontals, lamellar flakes or blades, the front-distal modified type of beaver incisor, and the use of native copper.

INTERPRETATIONS

The Saugeen Focus represents an early stage of the Middle Woodland Period in northeastern North America. Village sites range from one to three acres in extent, situated at favourable fishing locations such as at major rapids. The nature of the refuse at the Donaldson site supports the premise that these sites probably represent fishing stations. The presence of substantial sites at favourable fishing locations and the absence of such sites at non-fishing locations both suggest that the people of the Saugeen Focus followed an economic pattern similar to that of the northern Algonkians. That is to say, they gathered at a location during the spring and summer where sufficient food to support a substantial population could be readily acquired. During this period of "easy living" the socio-religious aspects of the culture would be reaffirmed. In late autumn various family groups would migrate to their winter hunting territory with perhaps a small group remaining in the summer village. Such a splitting into small groups would be necessary in this area of southwestern Ontario where the land could not support a large population in the absence of an agricultural reserve.

The major diagnostic feature of the Saugeen Focus is the application of early Middle Woodland decorative techniques and motifs to an Early Woodland paste. Also, the decorative technique and motif are both much

cruder than those observed on the ceramics of related complexes. There are few specific qualitative traits that appear to be the sole property of the Saugeen Focus. Rather, the varieties of worked beaver incisors, projectile points, scrapers, and so forth, appear to be shared in varying degrees with other Middle Woodland manifestations. At the present stage of knowledge, it is not possible to estimate the quantitative value of these varieties of artifacts in terms of time and space. It is also felt that the few minor traits (i.e., a particular scraper variety) that appear to be restricted to this focus may merely reflect the limited knowledge of related complexes at this particular period. In short, it is the ceramic complex that allows the effective differentiation of the Saugeen Focus from other foci of the Middle Woodland period.

The distribution of the Saugeen Focus is imperfectly known at the present time. An examination of materials collected by two former National Museum archaeologists, Mr. T. E. Lee (1951, 1952) and Mr. W. J. Wintenberg, used in conjunction with personal survey, revealed that Saugeen Focus ceramics occur in a large portion of the central region of southwestern Ontario. This area encompasses the Saugeen River and Grand River drainages connecting Lake Huron to Lake Erie as well as the headwaters of the Thames River (Figure 8). Sites are particularly abundant in Bruce County on Lake Huron and in Elgin County along the north shore of Lake Erie. The materials upon which this distribution is based are in the National Museum of Canada.

Two carbon samples from the Donaldson site were submitted for Carbon-14 analysis to Dr. K. J. McCallum, Professor of Chemistry at the University of Saskatchewan. In a letter dated June 30, 1961, Dr. McCallum stated: "The sample from pit No. 1 was given our number S-118. The results of three determinations spread over a period of one month agreed very well and give a value of 725 ± 50 years. The sample from pit No. 2 was given our number S-119. Measurement over the same interval on this gave three good results, with an average value of $2,480 \pm 60$ years."¹ The date obtained from S-118 is much too late for the material found in the pit, and contamination by recent carbon is regarded as the most likely explanation. Evidence of a number of carbonized pine stumps was encountered on the site, and although no marked disturbance was noted during the excavation of the pit producing sample S-118, it is felt that such a postulated intrusion of carbonized roots would be very difficult to recognize. The reading acquired from sample S-119, however, ties in very nicely with the comparative analysis. Therefore, the occupation of the Donaldson site is believed to have taken place at approximately 500 B.C.

At the lowest stratum of the Burley site (Jury and Jury, 1952:73) located near Port Franks, Lake Huron, a Carbon-14 reading (C-192) of $2,619 \pm 220$ years ago was obtained. The carbon was associated with sherds that the writer would unhesitatingly assign to the Saugeen Focus.

The Saugeen Focus possesses relationships with three other Woodland complexes: the Rainy River Aspect to the west; the Point Peninsula Focus to the east; and the Morton Focus to the southwest. Probably the geo-

¹ Carbon sample S-118 from Pit 1 refers to carbon recovered from Pit 3 (burial area) in this report, and carbon sample S-119 from Pit 2 refers to carbon from Pit 2 (burial area). The discrepancy is due to feature number alterations during the process of writing the report.

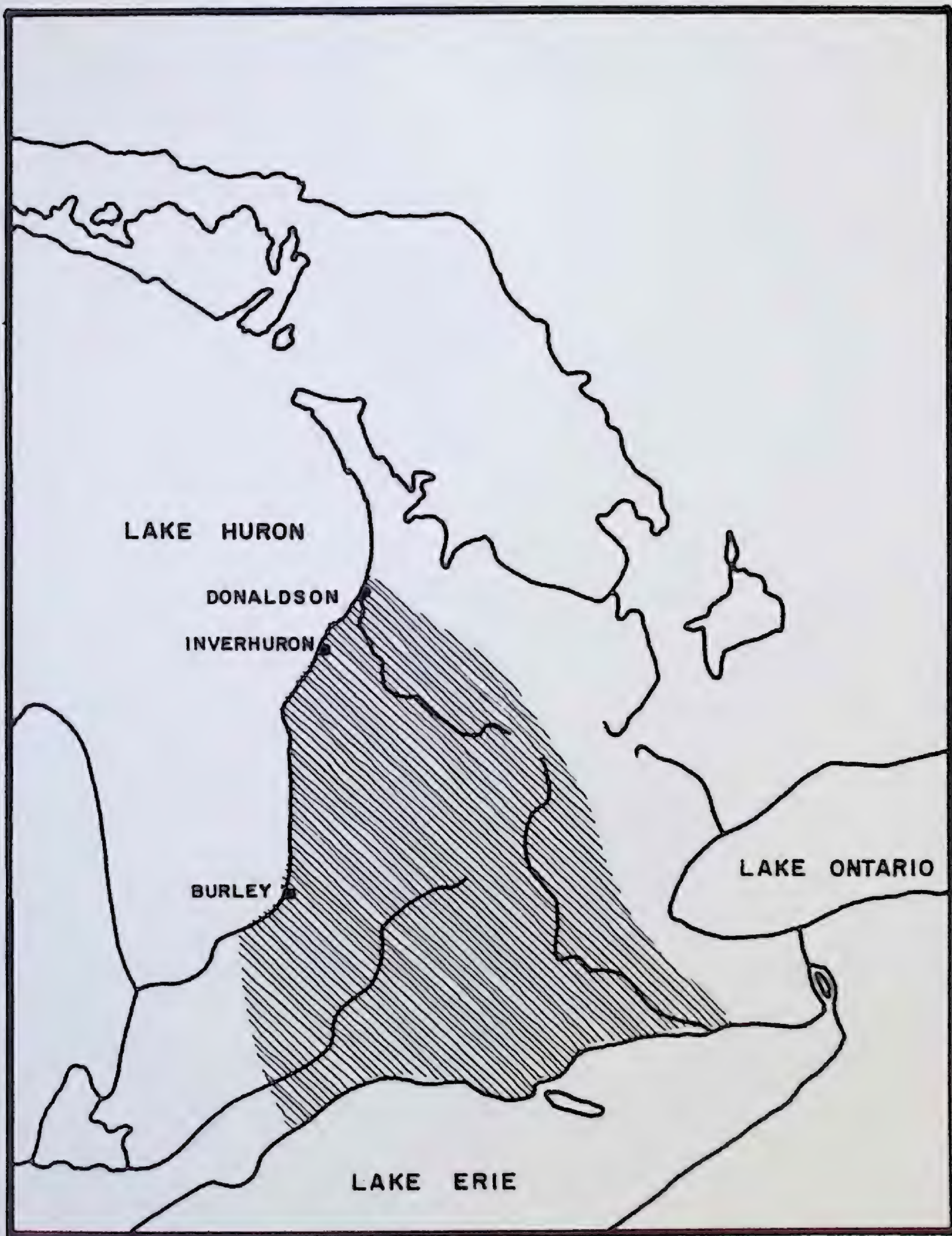


FIGURE 8. Approximate distribution of the Saugeen focus

graphical location of the Saugeen Focus was a critical factor in the realization of these interrelationships. Also, at this early time, it is felt that regionalization had not so completely clouded the common developmental base. The nature and the intensity of relationships with these complexes are vari-

able and recommend their individual examination. As the northern manifestations of the Middle Woodland period have a more direct bearing on the matter they will be examined first.

RAINY RIVER ASPECT

The Rainy River Aspect of the Middle Woodland Period was first defined by L. A. Wilford in the area of northern Minnesota (Wilford, 1943, 1955). Subsequent work by R. S. MacNeish in southeastern Manitoba (MacNeish, 1958) allowed the formulation of two new foci of this aspect—Anderson and Nutimik. Archaeological survey carried out by the writer in northern Ontario during 1960 and 1961 revealed that the Rainy River Aspect extended from the Manitoba border along the north shore of Lake Superior down to Manitoulin Island and, finally, into the Bruce Peninsula of southwestern Ontario. As was noted in the analysis, nine rim sherds and nineteen body sherds belonging to the Rainy River Aspect were found in the middens and pits of the Donaldson site in direct association with Saugeen Focus material. Also the single socketed barbed antler harpoon with line hole applies to the Laurel Focus of the Rainy River Aspect. The sherds possess marked correspondences with ceramics from the Nutimik Focus (MacNeish, 1958:61), and a number of the rims are indistinguishable from the Nutimik Oblique and Lockport Linear pottery types (*ibid.*:150, 151). MacNeish has estimated that the Nutimik Focus existed from A.D. 500 to 1000. However, the association of Nutimik Focus sherds with the Saugeen Focus material suggests that the age estimate for the former focus is too recent. Assuming the validity of an approximate age of 500 B.C. for the Saugeen Focus on the basis of carbon sample S-119 at the Donaldson site, a slightly earlier date from the Burley site, and specific artifact correspondences with related complexes carbon-dated at approximately the same period, there is a basis for regarding the Nutimik Focus as being present before 500 B.C. This would, in turn, thrust the earlier Anderson Focus even further back in time and add partial support to a hypothesis proposed by MacNeish (*ibid.*: 81, 82):

"But is it not possible that Woodland pottery, besides being grafted onto a Denbigh-like complex on the Firth River, also was diffused to similar complexes along the Arctic coast to Hudson Bay down the west side of the Bay, and thence spread into the Eastern Woodlands from the southern part of Hudson Bay? Such a hypothesis would account for the diffusion of Asiatic pottery to the Eastern Woodlands, as well as explain why the earliest Woodland pottery so far uncovered comes from Upper New York State and not from the northern Plains. It also would indicate a way in which this Asiatic-derived pottery, after some time-lag and further development (and perhaps some outside stimulus), could have spread from the east into Manitoba. Only future archaeological investigation along the southern and western coastal plains of Hudson Bay may yield the crucial data for the solution of the problem of the origin of the Woodland ceramic complex."

The writer disagrees with the direction from which the MacNeish hypothesis brings the Woodland complex into southeast Manitoba and would suggest that a movement out of the north or northeast agrees more fully with present information.

Although it is admitted that the amount of Nutimik Focus material found at the Donaldson site is minute in comparison to the speculations its presence has stimulated, it is felt that the possible consequences of the association for future research are of importance, and, as such, a speculative examination of the situation may be permitted. In the same vein, it is interesting to note the occurrence of blades, flake knives, prismatic blades, lamellar flakes, or, in short, linear flakes struck from a prepared core, as a minority trait among all these Early and Middle Woodland period complexes and to recall MacNeish's recovery of dentate stamped Woodland pottery in association with a waning Arctic Small Tool Tradition (Buckland Hills Phase) at the Engigsteiak site (MacNeish, 1959:50, 51).

An archaeological survey of the Albany, Nelson, and Churchill rivers is planned by the writer for the 1962-63 field seasons, and the results of the survey should confirm or negate the hypothesis offered by MacNeish. At the present, however, the evidence from the Donaldson site tends to favour the sequence of events that were speculatively envisioned by MacNeish.

POINT PENINSULA FOCUS

The Point Peninsula Focus in Ontario has acted as a catch-all for Middle Woodland complexes. The only published reports on actual major Ontario Point Peninsula Focus sites, in the writer's estimation, are the Kant site (Emerson, 1955), the Malcolm site (Dailey and Wright, 1955), and the East Sugar Island site (Ritchie, 1949), and, as would be expected, certain regional variations express themselves within these sites. The Saugeen Focus has, with one exception (Jury and Jury, 1952) been placed in the Point Peninsula Focus (Lee, 1951, 1952, 1960; Wright, 1956; Kenyon, 1959), and similar treatment has been awarded to the Rainy River Aspect (Lee, 1960:77). An even broader domain for the Point Peninsula Focus has been suggested by Carpenter (1953). The Point Peninsula stratum at the Frank Bay site (Ridley, 1954) is difficult to assess since both Rainy River Aspect and Point Peninsula Focus ceramics appear to be associated along with elements from later ceramic traditions. It is noteworthy that the sites possessing the closest correspondences with the Point Peninsula Focus are all east of Toronto.

The preceding statement of the Point Peninsula Focus's relationship with neighbouring Middle Woodland complexes was deemed necessary in anticipation of the degree and kind of relationship which appears to exist between it and the Saugeen Focus. At this comparative level it is the Point Peninsula 2 Focus (Ritchie, 1951) with its Vinette 2 pottery which is under consideration. Considering the small ceramic samples being dealt with by the earlier writers (Wright, 1956; Kenyon, 1959; Lee, 1960) and the marked synthesizing effect such a decorative technique as pseudo scallop shell can have, it is perhaps not too surprising that the lumping of related complexes into the Point Peninsula Focus took place. This very lumping tendency is the best reflection of the basic relationship which exists between the Point Peninsula and Saugeen foci. There are not only strong correspondences in the types of decorative techniques used but also in the variety of motifs. A critical difference does occur at this level in that the

Saugeen Focus decorative implement is much cruder and is used in a more careless manner. And though a number of motifs are common to both foci, important qualitative and quantitative differences do exist. Correspondences also exist in the stone and bone complexes, although a quantitative factor appears to be present in the weaknesses of these artifact complexes in the Saugeen Focus relative to the Point Peninsula Focus.

The temporal and spatial relationship of these two foci to one another is still conjectural. The Point Peninsula 2 Focus appears in eastern Ontario and western, central, and northern New York State (Ritchie, 1944:115) as a major complex of relatively homogeneous sites. Indeed, in eastern Ontario these sites may be said to represent the first archaeological evidence of a substantial population. All the sites possess Vinette 2 ware which Ritchie (1951:134) characterizes as "the grit-tempered, dentate-stamped, rocker-marked, and cord decorated pottery of conoidal based form." The ware has been subdivided into a number of types with varying time and space significance (Ritchie and MacNeish, 1949). A single carbon date is available for a late stage of this focus (Johnston, 1960) as represented by the Serpent Mounds site in eastern Ontario. This reading was 1830 ± 200 or A.D. 128. The Morrow site (Guthe, 1957) in Ontario County, New York, which was dated at $570 \text{ B.C.} \pm 250$ (M-640), is regarded by Guthe and Ritchie as Point Peninsula 1 Focus. Vinette 1 pottery was recovered from the site, but unfortunately it was in loose dirt piled up by construction activities. For the present, however, it is assumed that the carbon reading also applies to the Vinette 1 pottery. Two other carbon-14 readings appear to date Vinette 1 pottery; one at the Oberlander 2 site in central New York of $998 \text{ B.C.} \pm 170$ (C-192) (Ritchie, 1951) and the other from the Hunter site at Red Lake in northwestern New York of $2448 \text{ B.C.} \pm 260$ (C-794) (Ritchie, 1955:66-67). This latter carbon date has recently been checked by reanalysis of the same sample with a resulting date of $841 \text{ B.C.} \pm 68$ (Y-981) (pers. comm., W. A. Ritchie). The new date is more meaningful in the light of our present knowledge of the Point Peninsula 1 Focus in the northeast.

Thus, it can be seen that, while Vinette 1 pottery precedes both the Vinette 2 ceramics and the Saugeen Focus ceramics in the northeast, there is a possibility of a temporal overlap between the latter stages of the Point Peninsula 1 Focus (Morrow site, $570 \text{ B.C.} \pm 250$) and the Saugeen Focus (Burley site, $667 \text{ B.C.} \pm 220$). Yet, at the Donaldson site, Vinette 1 pottery was represented by only one rim sherd and ten body sherds. This suggests that the Saugeen ceramics are not the result of Middle Woodland decorative techniques and motifs being grafted onto an Early Woodland complex such as the Point Peninsula 1 Focus. If this were the case, a much higher percentage of the Vinette 1 pottery type would be expected to survive. The only explanation that can be offered at the present time with regard to this rather unique combination of Middle Woodland motif and technique attributes and Early Woodland paste attributes is that the Rainy River Aspect advanced eastward to come in contact with Late Archaic peoples, as represented by the Inverhuron Archaic culture dated at 2900 ± 75 (Kenyon, 1959: 14), and that these latter people adopted the western ceramic tradition but were unable to duplicate the paste attributes. This interpretation is given some support by the presence of certain stone tools

such as the simple utilized concoidal flake (Kenyon, 1955, Plate III) (Plate XXI, fig. 15) and some of the corner- and side-notched projectile points to be found in both complexes. The use of cooking pits and the superabundance of firestone in both the Inverhuron Archaic and the Saugeen Focus may also be pertinent to a possible genetic relationship. The crudity of technique and the variety of motif in Saugeen ceramics may well reflect the relatively recent position of ceramics within the complex.

At a highly speculative level it may be suggested that as the Rainy River Aspect moved eastward, it influenced Late Archaic groups in southwestern Ontario resulting in the formation of the Saugeen Focus. And though the inference is that the Rainy River Aspect was the main factor in the formation of the Point Peninsula 2 Focus, it is also possible that the Saugeen Focus, as a minor regional development stemming from these western influences, also played a minor role in the development of the Point Peninsula 2 Focus with its Vinette 2 ware. This western origin of the Vinette 2 ware in Point Peninsula was inferred by MacNeish and concurred in by Ritchie (Ritchie, 1951: 134).

The preceding discussion of the Rainy River Aspect and the Point Peninsula Focus relationships to the Saugeen Focus has attempted to illustrate some of the basic similarities that appear to exist within these three Middle Woodland complexes and to offer possible explanations as to how these similarities came about. Thus, it is postulated that these related Middle Woodland complexes stretch from southeastern Manitoba through Ontario and southern Quebec into New York State. Also Vinette 2 ceramics extend through the upper New England States (Ritchie, 1951: 134), although the complexes to which these ceramics belong are only slightly known. This situation is reflected in another inference made by MacNeish (1958: 142):

"Interestingly enough, the Manitoba pottery shows considerable resemblance to the pottery found in the northeastern United States and the adjacent part of Canada. The earliest pottery in the northeast, such as Vinette 1 ware or wares of Early Woodland times, is lacking in Manitoba, but the Point Peninsula wares that follow Vinette 1 wares in New York are extremely similar to our Laurel ware. . . ." and, "One cannot help but feel that somehow the southeastern Manitoba, northern Minnesota, and northeastern Woodland ceramics are genetically connected on an early time level."

The next complex to be considered, the Morton Focus, does not bear so directly on the Saugeen Focus as do the preceding two complexes. There are, however, certain shared traits that suggest contacts between this Illinois Early Woodland manifestation and the Saugeen Focus. The fact that all the contacts are of an early nature also tends to confirm the antiquity of the complex presently under consideration.

MORTON FOCUS

The Morton Focus of the Central Basin Phase in central Illinois was initially defined by Cole and Deuel (1937) and was later re-examined by Bluhm (1951). Its diagnostic features (Cole and Deuel, 1937: 223) are flexed burials with sparse use of grave goods in accretionary mounds; crude

side-notched, corner-notched, and stemmed projectile points, "knives and scrapers; flakes without secondary chipping; resemble but are less specialized than Hopewellian," distinctive pottery varieties; and split bone awls. Bluhm (1951: 329) suggests "that the Hopewellian village complex grew out of the Central Basin village complex in central Illinois as a result of either indigenous development or diffusion of ideas."

Griffin (1958: 1) would place the beginning date of northern Hopewell at 400 B.C., thus making the Morton Focus slightly earlier. Such an arrangement would make the Morton and Saugeen foci contemporaries and offers the logical explanation for Morton Focus-like ceramics being present at the Donaldson site. A series of rim and body sherds from the Donaldson site possess circular punctate impressions that were apparently produced by impressing a hollow bird bone or reed into the wet clay. The sample consisted of nine rim sherds and thirty-six body sherds. On the rims this motif occurred superimposed over dentate stamp, except for one plain rim. On the body sherds the circular punctates occurred on plain, dentate stamped, and rocker stamped body sherds. Although the circular punctate motif is most frequently associated with dentate stamped sherds at the Donaldson site, it nevertheless resembles the Sisters Creek Punctated pottery type of the Morton Focus, described by Griffin (1952: 100) and stated to be early in this complex by Bluhm (1951: 328). The absence of this technique in the other comparative Woodland complexes strengthens the possibility of the suggested relationship between the Morton and Saugeen foci as does the presence of a single body sherd with zone decoration and several rim sherds reminiscent of Fette Incised (Griffin, 1952: 105). Besides the ceramic features discussed above, the two foci share similar projectile point varieties and flexed burials with sparse use of grave goods, and where grave goods do appear they are most frequently found in child burials (Neumann and Fowler, 1952: 220). The two worked bear canines associated with the necklace in Burial A are very similar to those found on a necklace from a Point Peninsula 2 Focus grave in New York (Ritchie, 1944: 146, Plate 65, No. 4). These specimens were inferred by Ritchie to have Hopewellian parallels.

The nature of the similarities seen between the Morton and Saugeen foci are more expressive of casual contacts than of close genetic relationship.

SUMMARY

The Donaldson site has been used as the major defining component of the Saugeen Focus. This focus, placed in the early Middle Woodland period, overlapped with neighbouring Early Woodland complexes (Morton Focus and, possibly, the Point Peninsula 1 Focus). In this respect, the Saugeen Focus may be thought of as a transitional stage between the Early and Middle Woodland periods with the ceramics reflecting the paste attributes of the former and the decorative technique and motif-attributes of the latter. The association of Rainy River Aspect pottery types with the Saugeen Focus complex has stimulated considerations bearing on the origin of the northeastern Middle Woodland by extending the time depth of the western Middle Woodland complex. The broad, spatial relationships of these

Early and Middle Woodland complexes to the Saugeen Focus are felt to reflect, in part, the geographic location of the latter in central southwestern Ontario and the common ancestral base of the complexes being compared.

The carriers of the Saugeen Focus appear to have followed a way of life similar to the historic northern Algonkians. On the basis of present information, all the components of this focus appear to represent fishing stations which were occupied during the spring and early summer. It was during this period of ready acquisition of abundant food in the form of fish that the major components of the Saugeen Focus are believed to have been formed. Numerous family camp-sites representing the winter settlement pattern are inferred to be scattered throughout the area of the Saugeen Focus, although their archaeological presence would be difficult to detect.

The later developments of the Saugeen Focus are unknown at this time.

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PLATES XI TO XXVI

PLATE XI

Pseudo Scallop Shell Rims

- FIG. 1, 2. One or more rows of obliques
FIG. 3, 4. One row of obliques over horizontals
FIG. 5, 6. One or more rows of chevrons
FIG. 7, 8. Criss-cross
FIG. 9, 10. Criss-cross over horizontals
FIG. 11, 12. One row of obliques over criss-cross
FIG. 13. Horizontal
FIG. 14, Criss-cross horizontals with superimposed incising
FIG. 15. Criss-cross over obliques

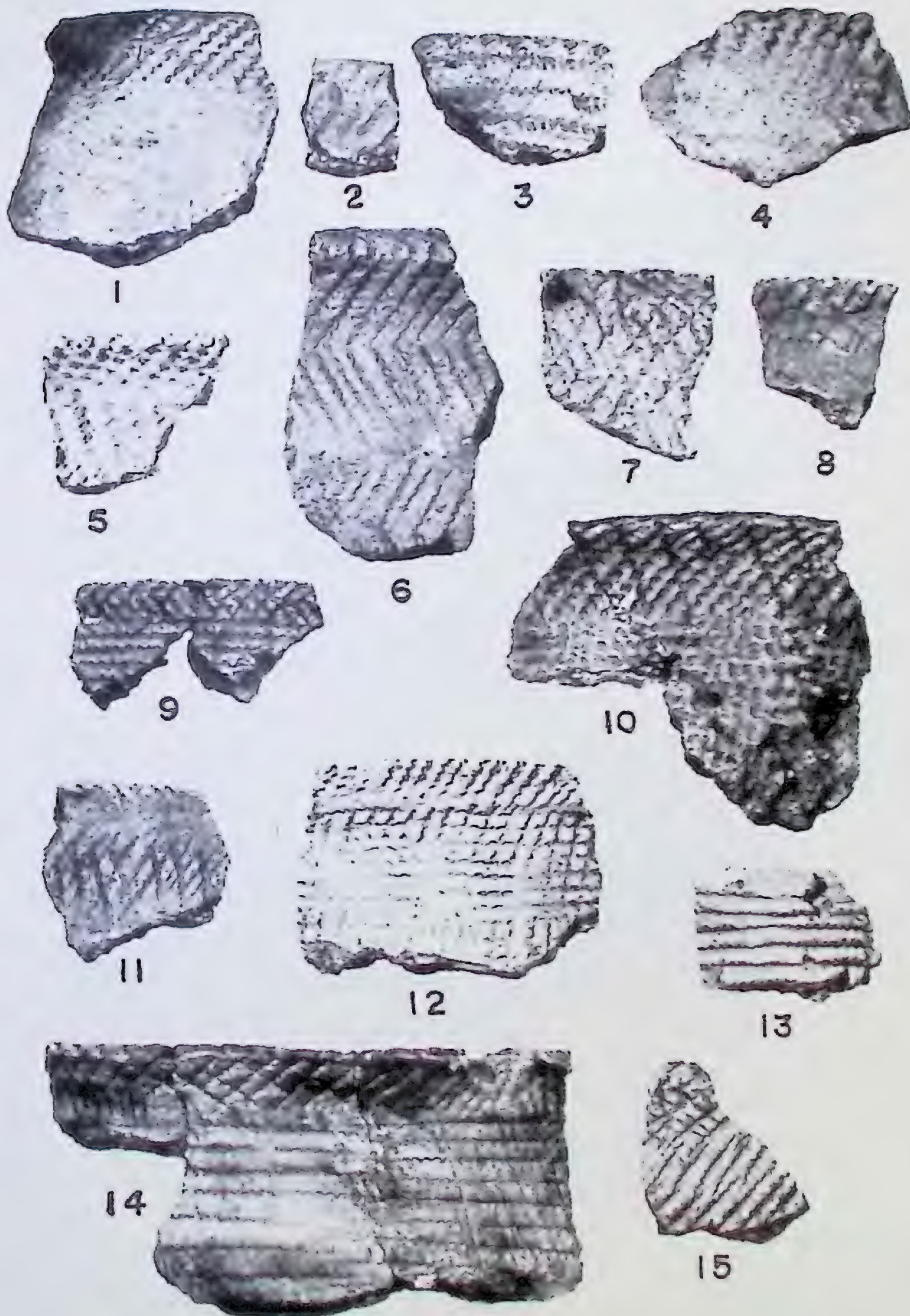
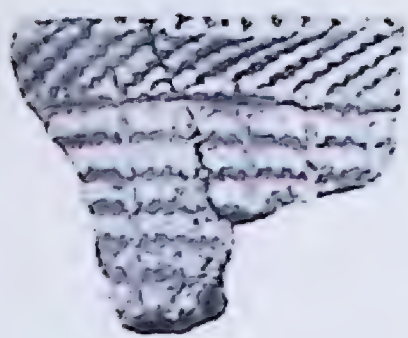


PLATE XII

Pseudo Scallop Shell Rims

- FIG. 1. Oblique over horizontals with superimposed incising
FIG. 2. Oblique over criss-cross over verticals
FIG. 3. Oblique over horizontal over oblique over horizontal
FIG. 4. Criss-cross over horizontals over zoned design over horizontals



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PLATE XIII

Dentate Stamped Rims

- FIG. 1, 2. One or more rows of obliques
FIG. 3, 4. Oblique or vertical over horizontals
FIG. 5, 6. Criss-cross
FIG. 7. Horizontals
FIG. 8. Chevron
FIG. 9. Criss-cross over horizontals
FIG. 10. Opposed obliques
FIG. 11. Oblique over criss-cross
FIG. 12. Blank over verticals
FIG. 13. Oblique over horizontals over oblique
FIG. 14. Oblique over verticals with superimposed incising
FIG. 15. Oblique over criss-cross over oblique

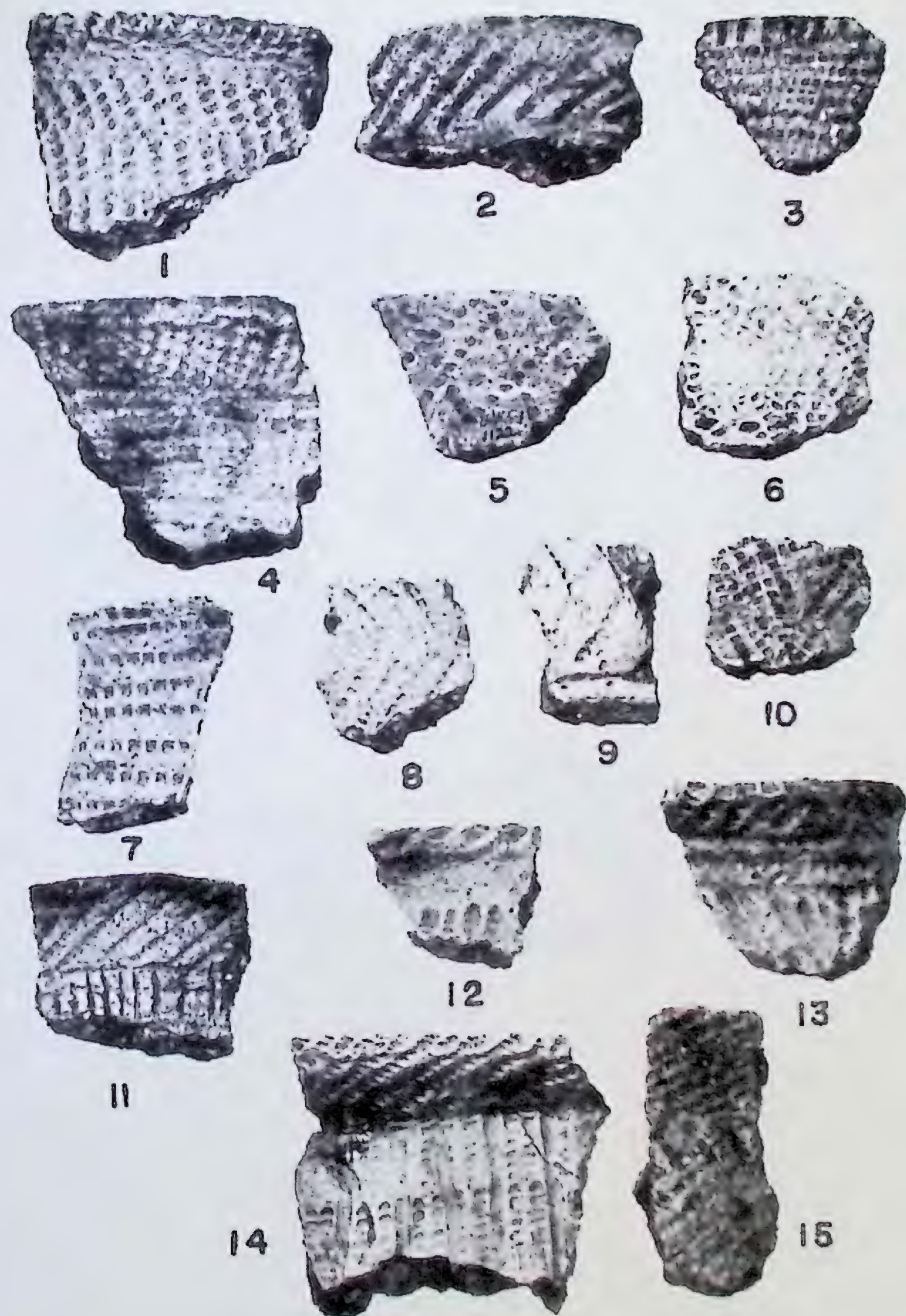
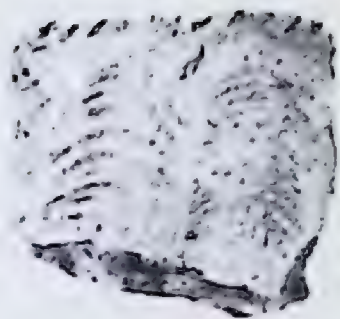
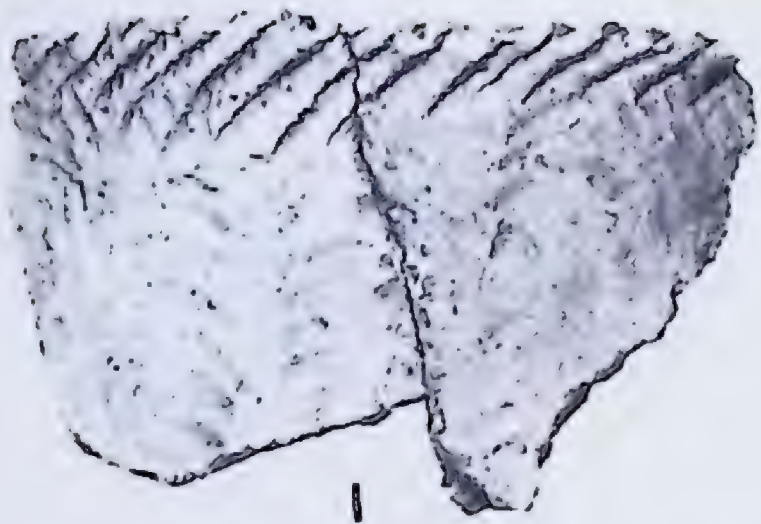


PLATE XIV

Rocker Stamped Rims

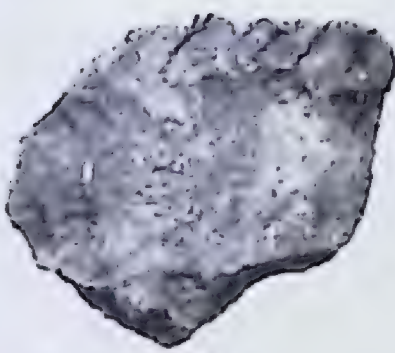
- FIG. 1, 2. Oblique pseudo scallop shell over horizontal rocker
FIG. 3, 4. Oblique pseudo scallop shell over vertical rocker
FIG. 5, 8. Vertical rocker
FIG. 6. Oblique punch over oblique rocker
FIG. 7. Oblique rocker
FIG. 9. Horizontal rocker with superimposed band of oblique pseudo scallop shell
FIG. 10. Vertical rocker over horizontal dentate



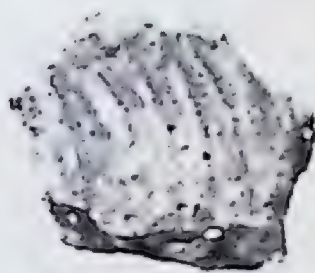
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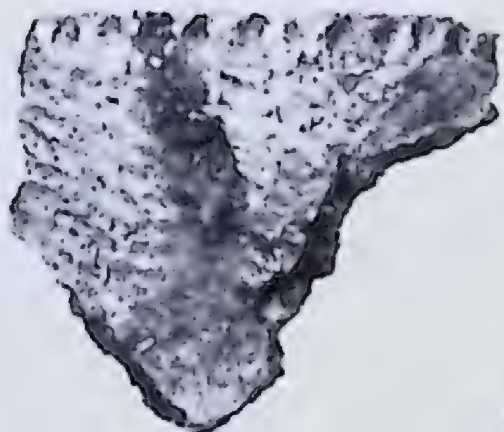
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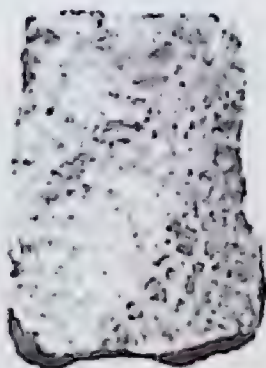
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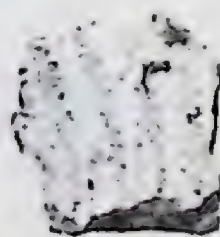
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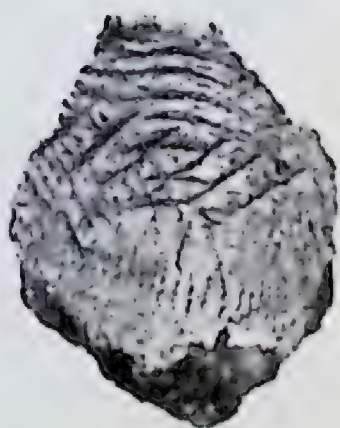
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PLATE XV

Incised Rims

- FIG. 1. Oblique
FIG. 2, 3. Criss-cross
FIG. 4. Chevron over criss-cross
FIG. 5. Vertical over criss-cross

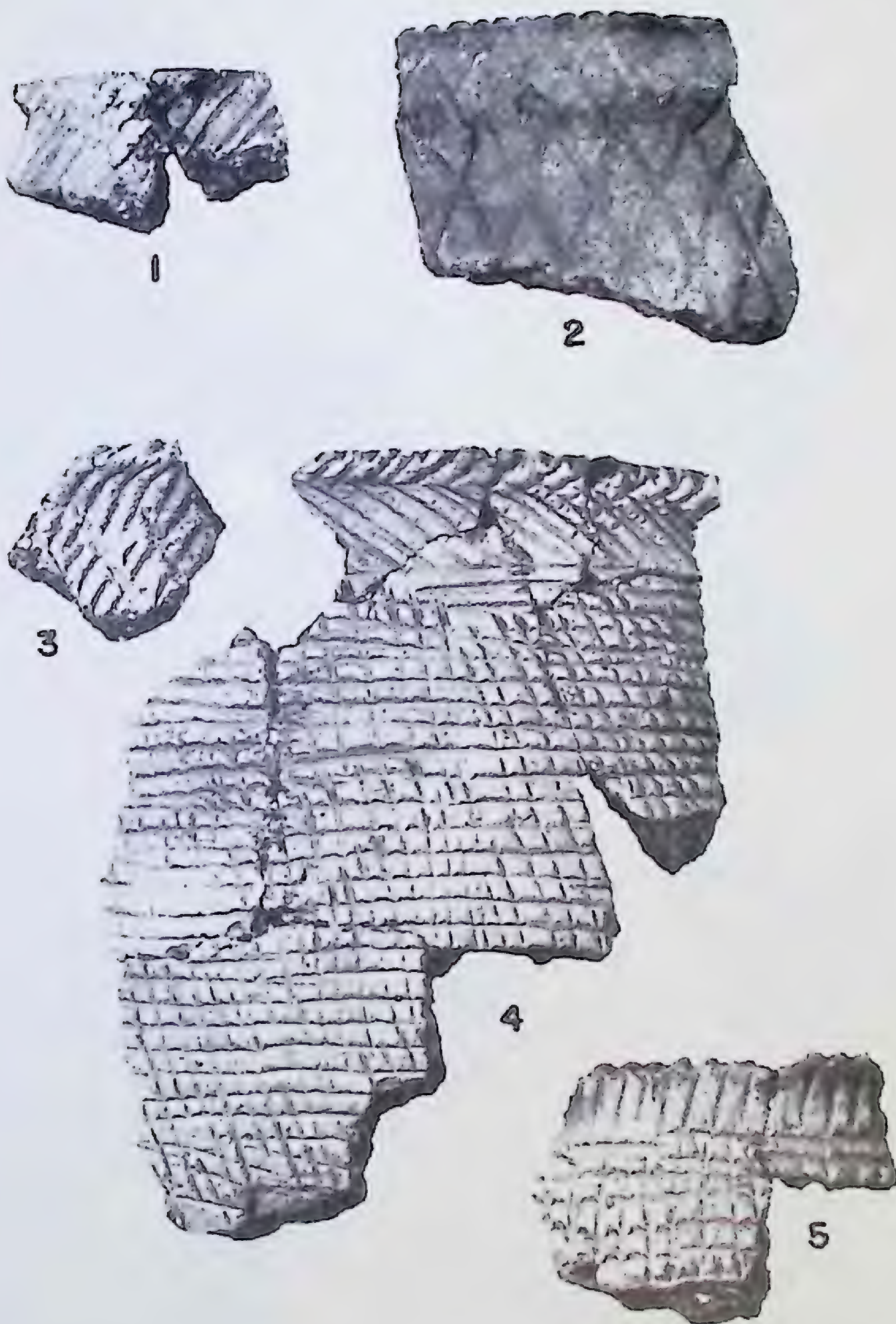


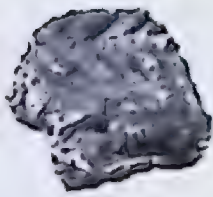
PLATE XVI

Iroquois and Rainy River Aspect Rims

FIG. 1.	Middleport Oblique	/ } / } / }	Iroquois
FIG. 2.	Ontario Oblique		
FIG. 3.	Ontario Horizontal		
FIG. 4-8.	Nutimik Oblique	/ } / } / }	Rainy River
FIG. 9, 10.	Lockport Linear		
FIG. 11, 12.	Miscellaneous		



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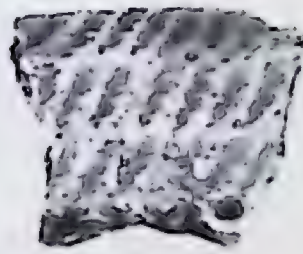
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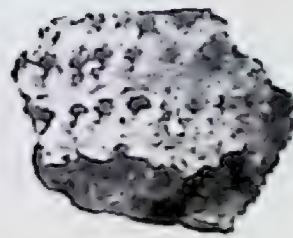
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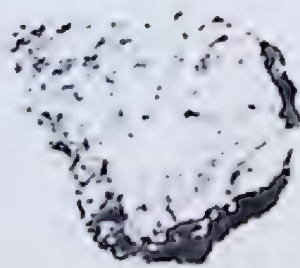
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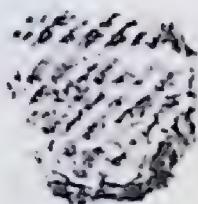
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PLATE XVII

Miscellaneous Rim Sherds

- FIG. 1. Plain
- FIG. 2. Decorated Lip
- FIG. 3-5. Circular Punctate
- FIG. 6. Cord Malleated
- FIG. 7. Cord-wrapped stick impressed
- FIG. 8, 9. Punctated
- FIG. 10. Thong Impressed
- FIG. 11. Complex Punctate
- FIG. 12. Vinette 1

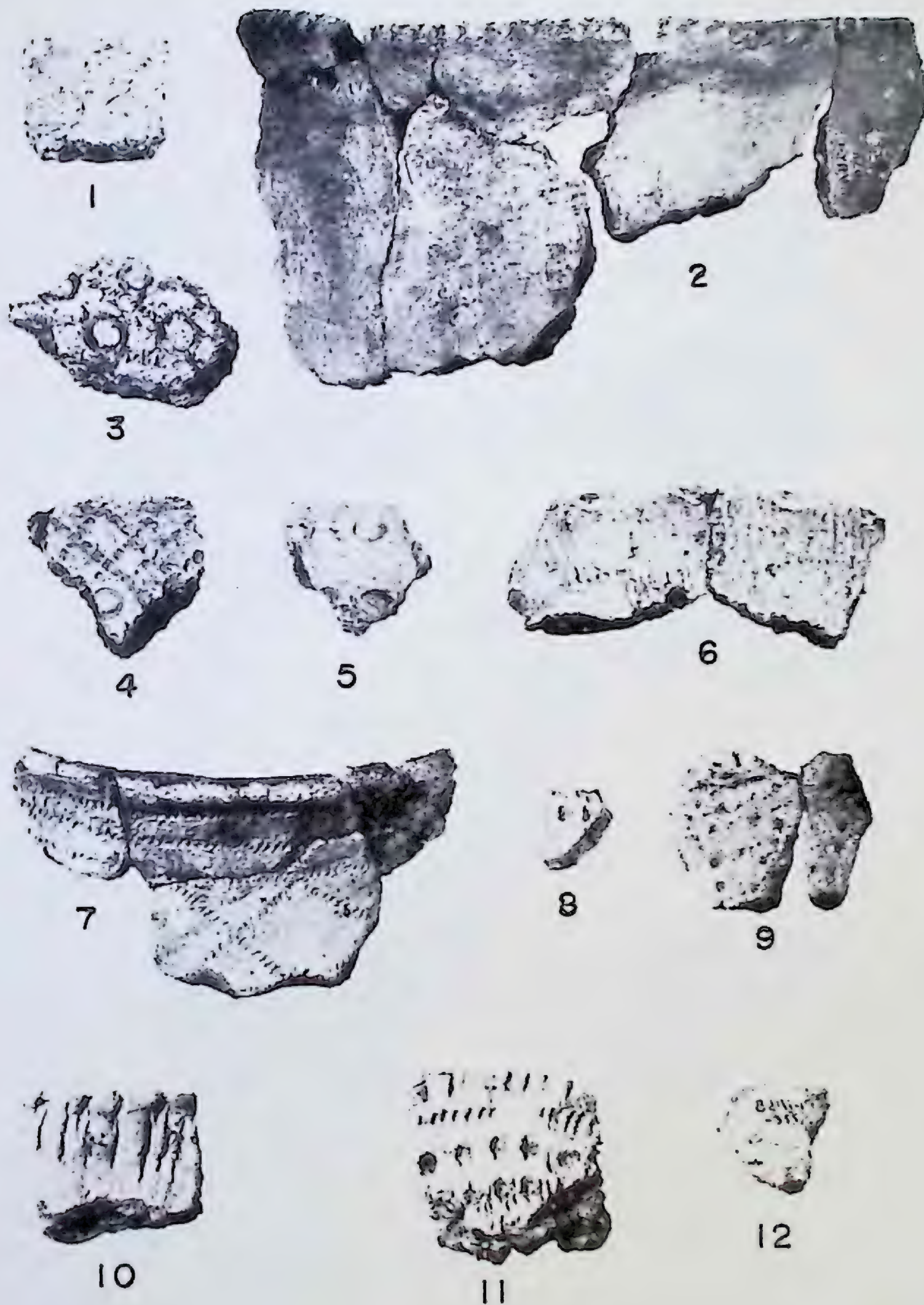
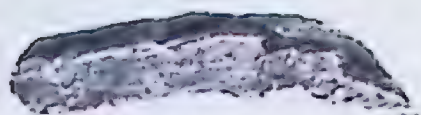


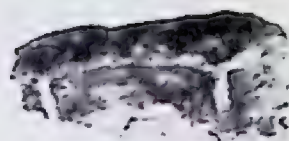
PLATE XVIII

Coiling Techniques

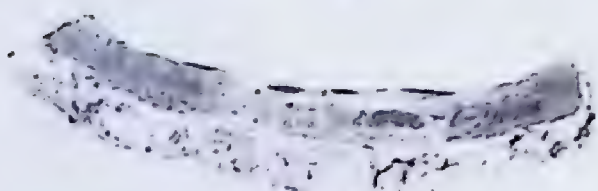
- FIG. 1, 2. Superior and inferior, normal coil break
FIG. 3. Figures 1 and 2 articulated
FIG. 4, 5. Superior and inferior mortice and tenon coil break
FIG. 6. Figures 4 and 5 articulated
FIG. 7, 8. Examples of notched variety of mortice and tenon coil seams
FIG. 9, 10. Examples of finger impressed variety of mortice and tenon coil seams



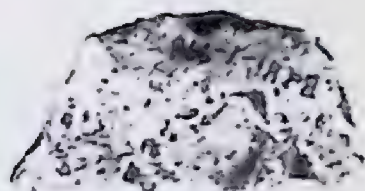
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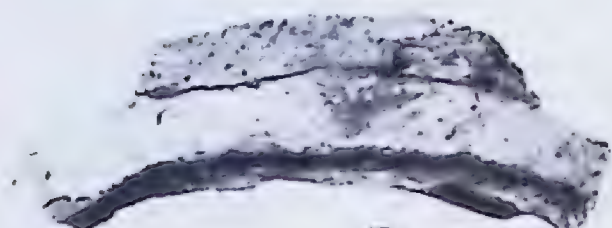
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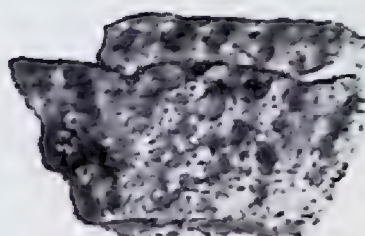
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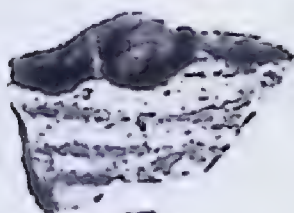
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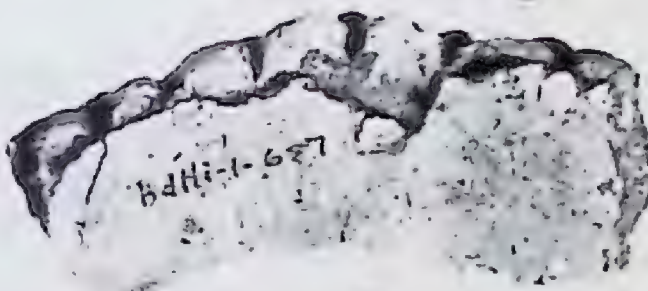
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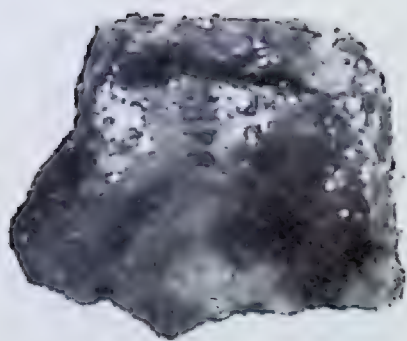
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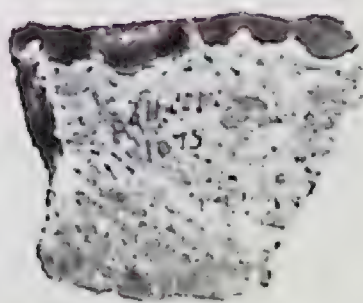
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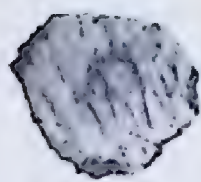


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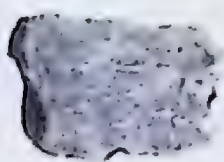
PLATE XIX

Miscellaneous Ceramics

- FIG. 1. Vinette 1 body sherd exterior
FIG. 2. Vinette 1 body sherd interior
FIG. 3. Zone stamped body sherd
FIG. 4-6. Rainy River Aspect body sherds
FIG. 7-9. Examples of juvenile ceramic art
FIG. 10, 11. Basal sherds



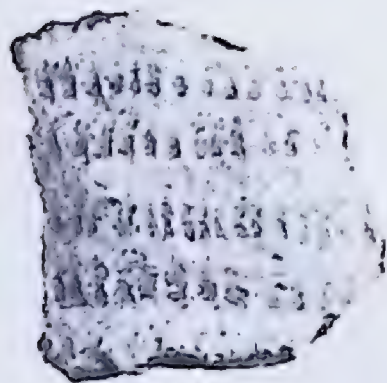
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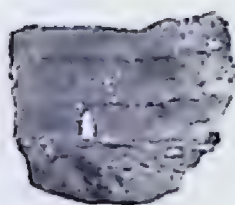
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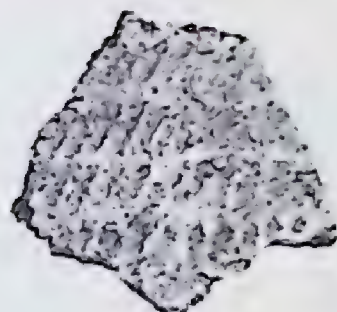
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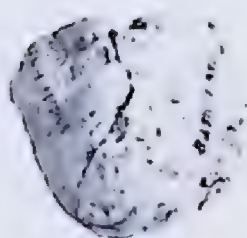
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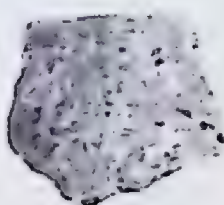
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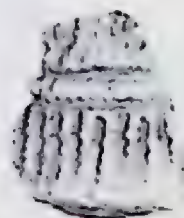
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PLATE XX

Projectile Points and Scrapers

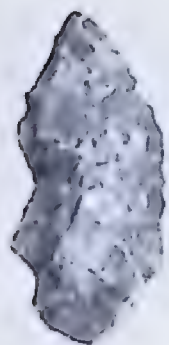
- FIG. 1-4. Varieties of side-notched points
FIG. 5-7. Varieties of corner-notched points
FIG. 8, 9. Trianguloid points
FIG. 10. Adena point
FIG. 11, 12. Expanding stem points
FIG. 13-16. Flake scrapers
FIG. 17-20. End scrapers
FIG. 21, 22. Stemmed scrapers
FIG. 23, 24. Hump-backed scrapers



PLATE XXI

Blades, Cores, and Choppers

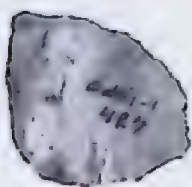
- FIG. 1, 2. Crude biface blades
FIG. 3. Flake with biface flaking along one edge
FIG. 4, 5. Flake blades
FIG. 6-8. Rectangular cores
FIG. 9. Bi-polar core
FIG. 10. Uni-polar core
FIG. 11, 12. Polyhedral-like cores
FIG. 13. Rectanguloid chopper
FIG. 14. Ovate acuminate chopper
FIG. 15. Knife-scraper spall with retouched edge



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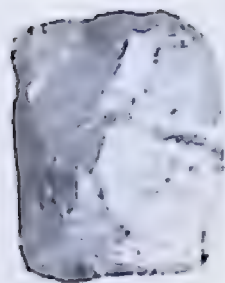
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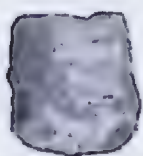
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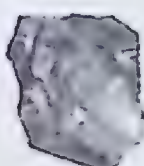
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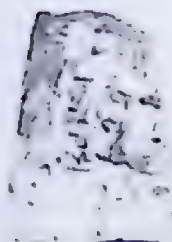
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PLATE XXII

Lithic Material

- FIG. 1. Unfinished birdstone
FIG. 2, 3. Rectangular gorget fragments
FIG. 4. Unfinished butterfly gorget
FIG. 5. Chisel
FIG. 6. End-notched net-sinker
FIG. 7. Polished adze
FIG. 8. Abrader
FIG. 9. Mano

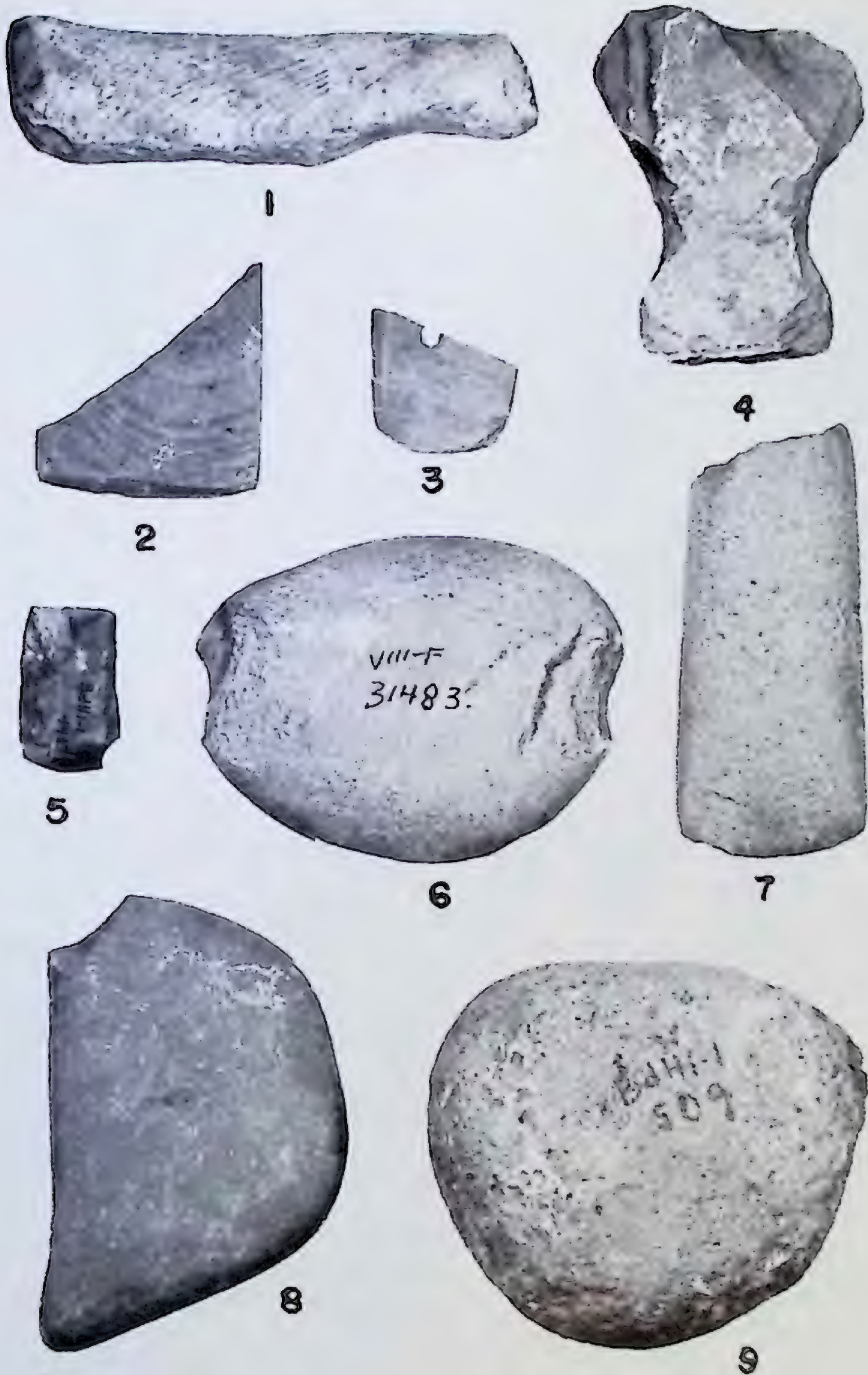
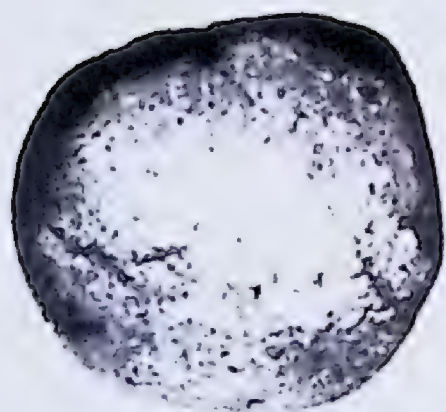


PLATE XXIII

Lithic Material

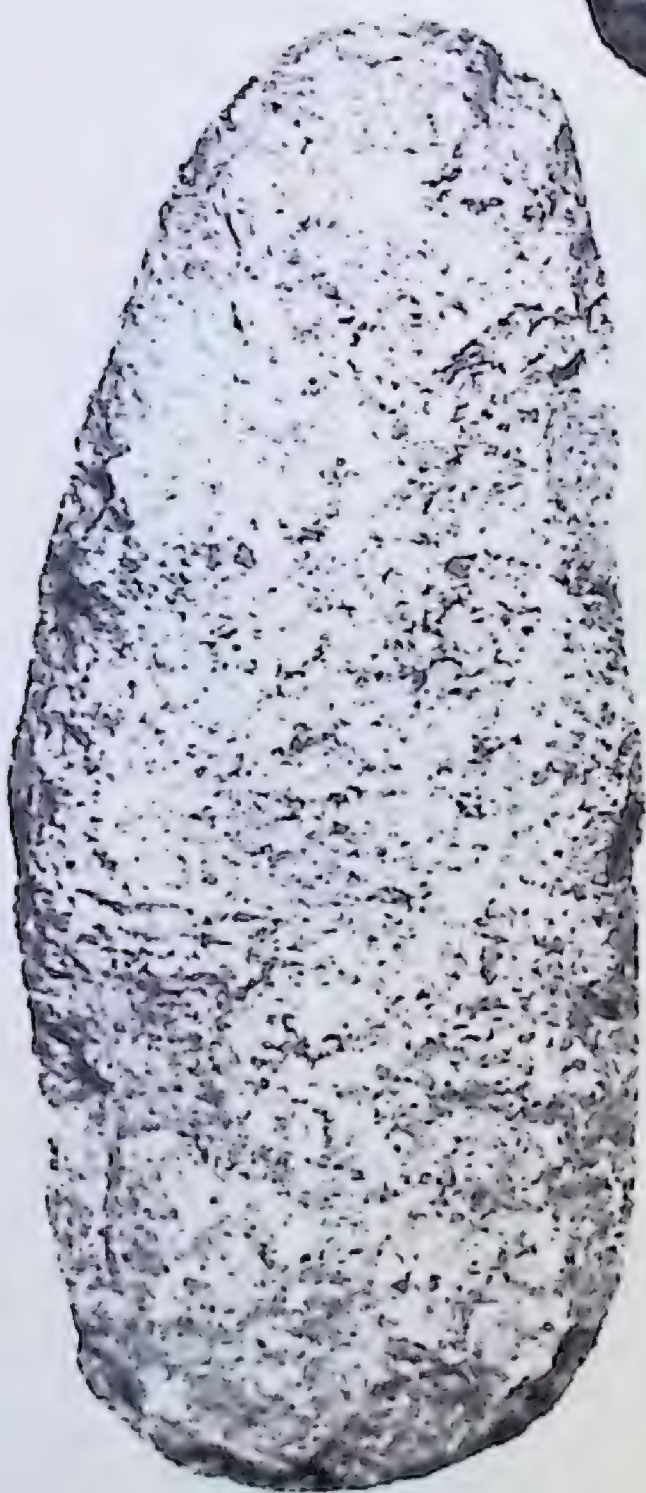
- FIG. 1. Hammerstone, circular variety
- FIG. 2. Metate fragment
- FIG. 3. Celt chopper
- FIG. 4. Flaked celt with pecking on one face



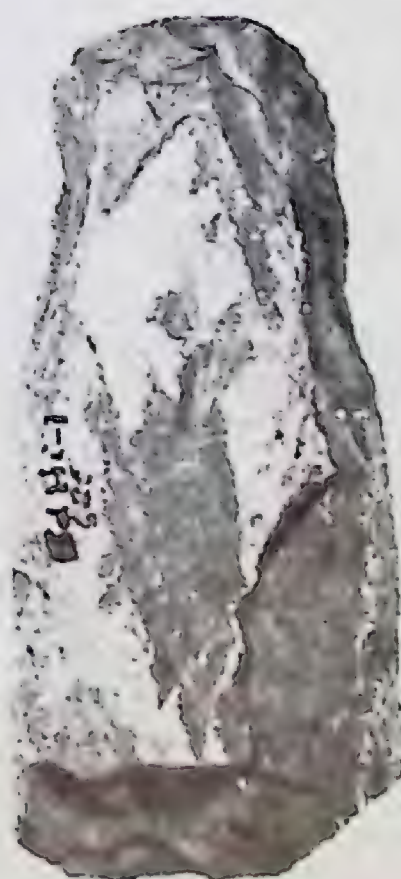
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PLATE XXIV

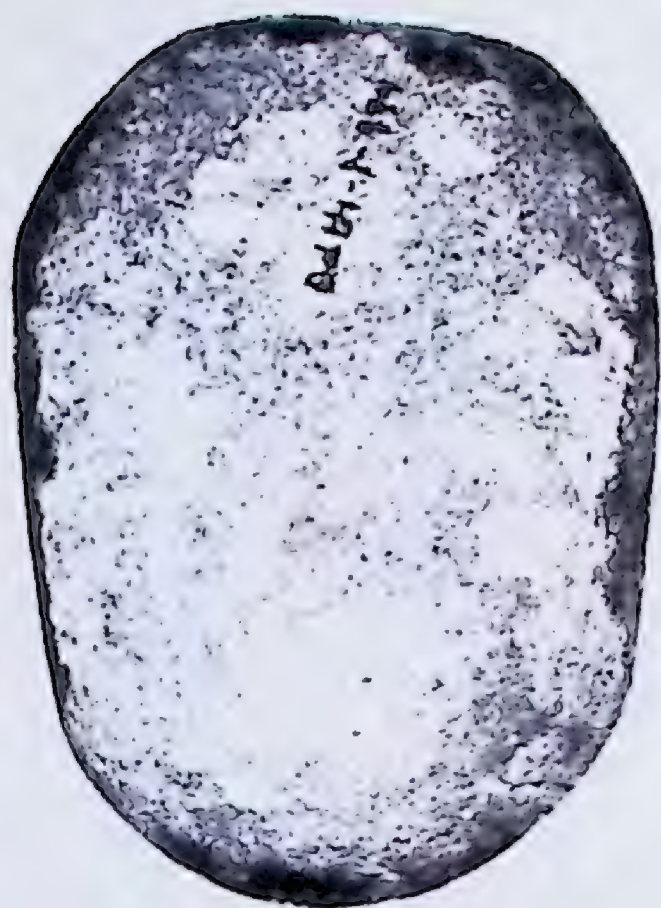
Anvil Stone Varieties

FIG. 1. Bi-pitted, rectanguloid

FIG. 2. Hex-pitted

FIG. 3. Uni-pitted

FIG. 4. Bi-pitted, circular



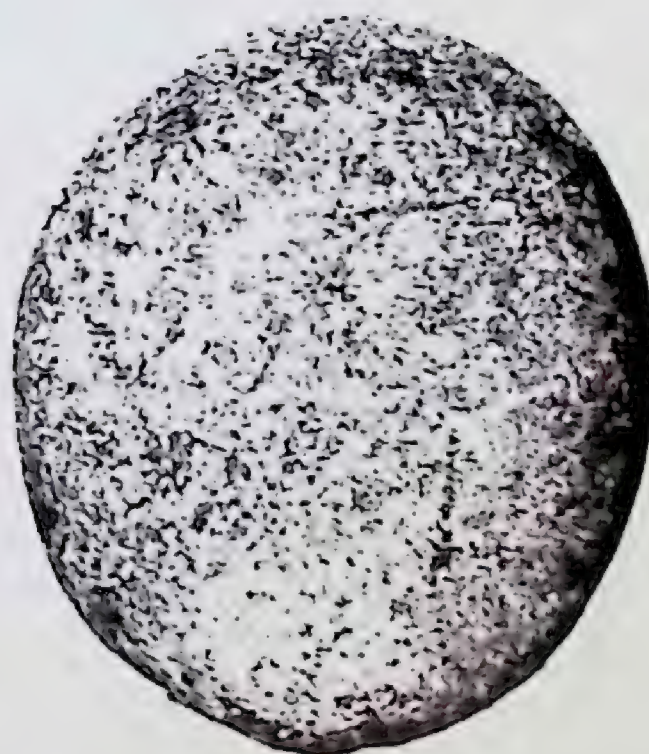
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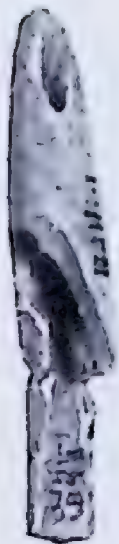
PLATE XXV

Bone and Copper Artifacts

- FIG. 1. Flesher (?)
- FIG. 2. Socketed harpoon with line hole
- FIG. 3. Notched bone
- FIG. 4-6. Worked incisors
- FIG. 7. Awl tip
- FIG. 8. Fish bone needle
- FIG. 9. Copper axe
- FIG. 10. Copper beads
- FIG. 11. Copper rod
- FIG. 12. Copper punch
- FIG. 13. Copper awl



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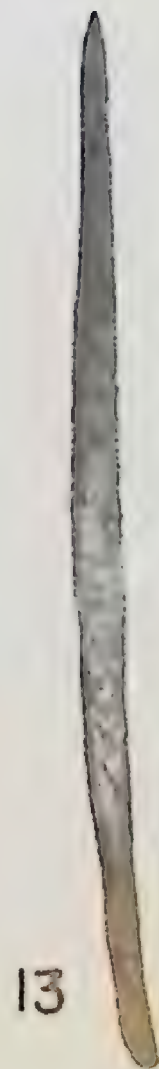
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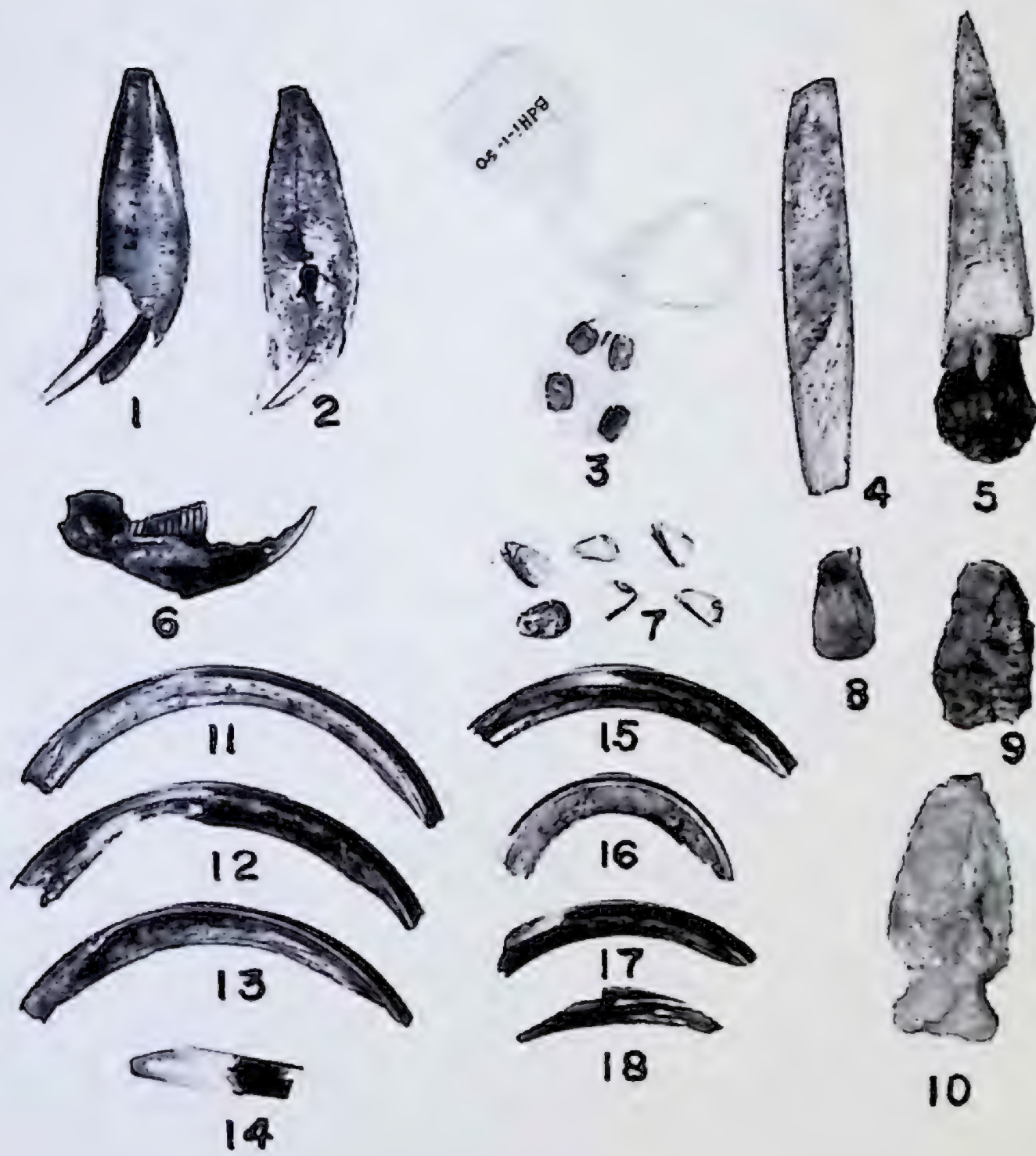


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PLATE XXVI

Grave Goods from Burial A

- FIG. 1, 2. Ground and perforated bear canines
FIG. 3. Copper beads
FIG. 4. Bone flaker (?)
FIG. 5. Antler scraper handle with scraper in place
FIG. 6. Worked rodent mandible
FIG. 7. Marginella beads associated with Figures 1-3
FIG. 8. End scraper
FIG. 9. Strike-a-light (?)
FIG. 10. Side-notched projectile point
FIG. 11-17. Unworked beaver incisors
FIG. 18. Worked beaver incisor



PART II
OSTEOLOGY OF THE DONALDSON SITE

BY
J. E. ANDERSON

OSTEOLOGY OF THE DONALDSON SITE

BURIALS

Table 1 is an outline of the Donaldson burials, summarizing the basic data. As may be seen, the excavated skeletons consist of one adult male, one adolescent male, two adult females, and eight infants or children. Scattered fragments recovered from the plough zone and material from a previous excavation indicate that two additional adults were buried in the area.

Of the relatively undisturbed burials, the orientation of the body was generally in the north-south line, the head facing either east or west. The skeletons were generally flexed, three lying on the left side, two on the right, and one on the back.

CRANIOLOGY

The Adult Male Skull (Burial D)

Craniometric data are listed in Table 2. This skull is brachycranic (broad in relation to length); hypsycranic (high in relation to length); tapeinocranic (low in relation to breadth); mesene (average relationship between upper facial height and diameter of the face); platyrrhine (having a broad nasal region); and chamaeconchic (orbits broad in relation to their height).

As may be seen in Plates I to IV, the skull is massive, with a high rounded vault, rugged muscle markings, and a slight sagittal crest. The supraorbital ridges are well developed and are of the continuous median type. There are supraorbital notches present bilaterally. The orbital apertures are rectangular, are moderately inclined away from the horizontal plane, and have quite angular corners.

The nasal bones are broad, rectangular, and slightly curved in section. Their profile is concavo-convex. The broad piriform nasal aperture has indistinct inferior margins.

The zygomatic bones are large and flat, and project both laterally and anteriorly. There is no canine fossa. The facial profile is orthognathic with very slight alveolar projection.

The mastoid processes are well developed. The tympanic plates are of average thickness and exhibit no dehiscences. The external auditory meati are oval in shape, and there are no auditory exostoses. The glenoid fossae are deep and healthy.

The vault sutures are indistinct, but sutural bones do not appear to have been present. The pterion is of the "H" form. The occipital region follows the curvature of the vault smoothly, with no evidence of torus formation. The superior nuchal line is prominent, and the apex is low in position.



Anterior view of skull D

The alveolar process of the maxilla is smoothly curved, the palate is high, and the transverse palatine suture is straight.

No cranial anomalies are present.

The mandible is huge, with a well-marked chin of bilateral form and moderate gonial eversion. The attachments of the Medial Pterygoid and Masseter muscles are heavily ridged, and the external oblique line is very prominent. The region of the symphysis menti is markedly convex internally. The ramus is tall: the lower border of the mandible rests almost horizontally when the skull is in the Frankfort Plane. The coronoid process, which is expanded and curved, projects higher than the mandibular condyle.

There is marked dental attrition with exposure of secondary dentin. The upper third molars have not erupted. The mandibular right deciduous

second molar has been retained with resorption of its roots but no eruption of the second premolar (See Plate II). There is no dental caries. Slight periodontal disease is in evidence with recession of the alveolar margin and loss of the buccal plate partially exposing the roots of some teeth.

PLATE II



Lateral view of skull D

Other Donaldson Crania

Table 2 lists the craniometric data of the four measurable skulls. Besides Burial D, the adult male, information is available for the two adult females and the young male.

The latter individual (Burial BD), approximately 15 years of age, already shows many characteristics similar to those of Burial D: rectangular orbits set obliquely, well-marked continuous supraorbital ridges,

blurred subnasal margins, an occipital ridge, bilateral chin form, and gonial eversion. There is close correspondence in basion-bregma height, auricular height, minimum frontal breadth, facial indices, and orbital index. There are no cranial anomalies.

The skull is very large, having the same cranial module as the adult. It is high vaulted and long, with a lower cranial index than Burial D. Additional growth in breadth would have produced a skull larger than that of the adult, but with more similar vault proportions as reflected in the indices. The facial region and the ramus of the mandible have not yet attained adult size.

The permanent dentition has erupted except for the third molars. Attrition is only slight, and there are no signs of caries or periodontal disease.

Four views of this skull are shown in Plate V.

PLATE III



Posterior view of skull D

The skull of Burial BC, an adult female, is smaller in size, as would be expected, than that of Burial D. It differs from the male in having a lower cranial index, a somewhat lower vault in relation to both breadth and length, a proportionately narrower face and nose, and less rectangular orbits. Small dehiscences are present in the tympanic plate, and there are a few small sutural bones in the coronal suture.

Considerable dental disease is present as shown in Plate VI. There is marked attrition. Upper central incisors, upper left second and third molars, and lower right first and second molars have been lost premortem with residual signs of alveolar infection. Abscesses are present around the roots of the lower right first premolar and the lower left first molar. Attrition of the latter tooth has extended into the pulp chamber. The crowns of the upper lateral incisors have been totally destroyed; only their roots remain. Crowding on the right side of the lower dental arch has resulted in lateral rotation of the lateral incisor and buccal tilting of the first premolar.

Skull BE, which has been badly damaged, resembles Skull BC. It is illustrated in Plate VII.

THE INFRACRANIAL SKELETON

Table 3 lists the metrical data for the infracranial skeleton of Burial D, an adult male, and for Burial BE, an adult female. All measurements are of the right side and are recorded in millimetres. The Donaldson skeletons are those of a tall, robust people.

PLATE IV



The mandible of Burial D, seen from above



Four views of skull BD

The Adult Male

The *scapulae* are large and rugged with convex medial borders, huge Teres Major muscle impressions, and bilateral suprascapular notches. The superior border is of the low triangular form. There is slight arthritic lipping of the glenoid fossae. The *humeri*, like all the limb bones, are long and robust with pronounced muscular markings. Septal apertures are absent.

The *femora* are very platymeric. Torsion and bowing is minimal. A slight Fossa of Allen is present in each femur. The *tibiae* are mesocnemic. Squatting facets are not present on the *talus*.



Four views of Skull BC:

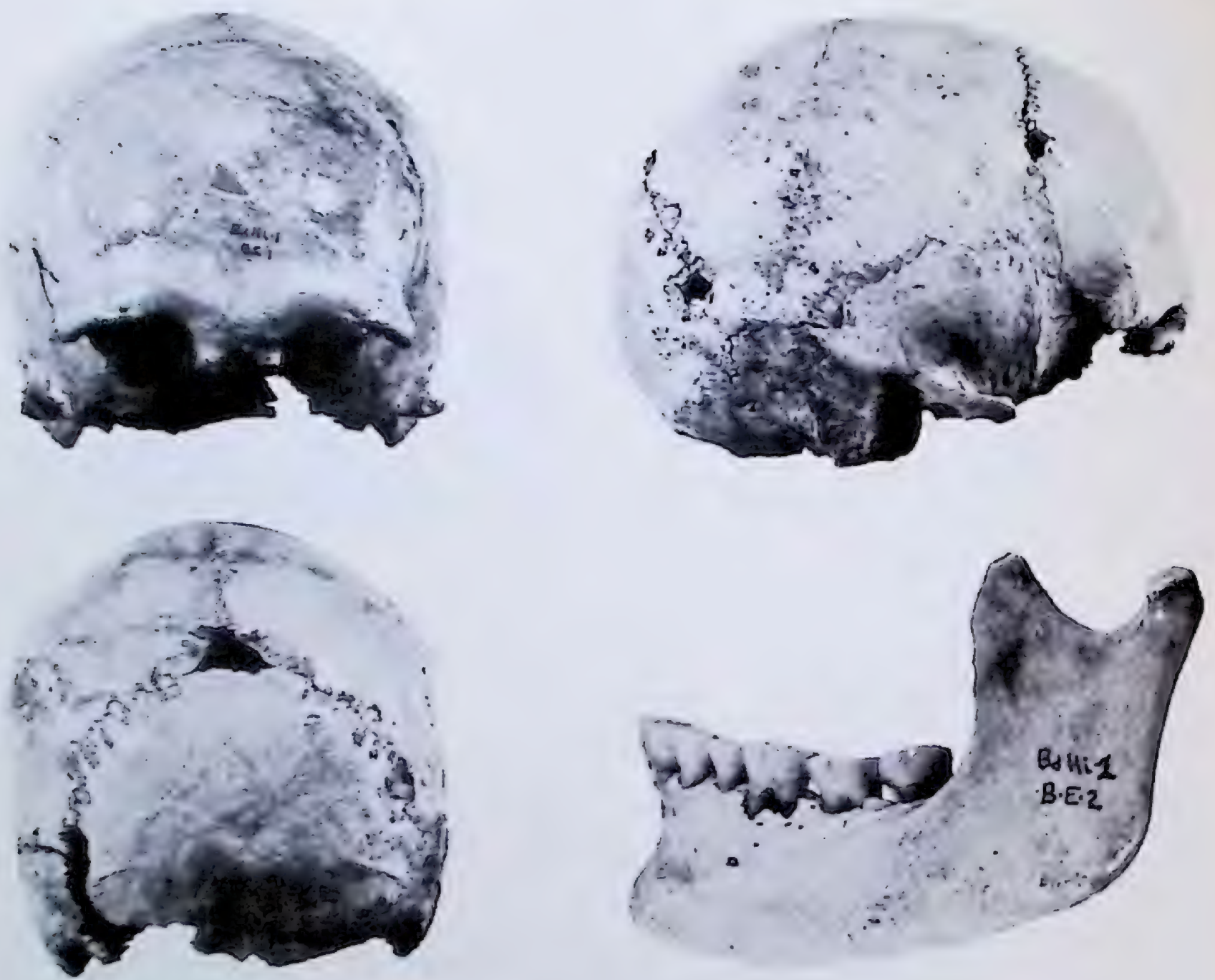
On the left—frontal and lateral views of the skull

On the right above—part of the maxillary dentition showing marked attrition and the retained carious roots of the incisors

On the right below—a side view of the mandible, showing an apical abscess at the roots of the first molar

There are slight arthritic changes in the costo-vertebral articulations, but none in the intervertebral joints. Small laminal spurs are present on the last two thoracic vertebrae. There are no anomalies of the foramen transversarium. The lumbar index is 100. The sacrum consists of five segments and has a very straight conformation. There are signs of recent fusion of the first and second sacral bodies.

The *pelvis* shows unmistakable male characteristics. The symphysis pubis score determined by the method of McKern and Stewart (1957) is 10, giving an age estimate of 26 years which is compatible with the evidence from the sacrum and the skull.



Four views of Skull BE

The stature, determined from the regression equations of Trotter and Gleser (1958), is 181 cm.

The Adult Female

The skeleton from Burial BE is also large and robust, but, as would be expected, not so much so as in the male.

There is slight lipping of the glenoid fossa of the *scapula*. Both *humeri* have large septal apertures. The femora show more bowing and torsion than in Burial D. There is slight arthritic lipping of its distal articulation. A tiny anomalous foramen is present on each side of the posterior arch of the *atlas*. Similar foramina are present on the atlas of Burial BC, another adult female.

The Adolescent Male

The following epiphyses have not yet fused: the coracoid process, acromion, and medial border of the *scapula*; the proximal end and medial

epicondyle of the humerus; both proximal and distal ends of the radius, ulna, femur, and tibia. The neural arches have fused to the centra of the vertebrae, but secondary centres remain separate. The sacral elements are unfused except for the lateral masses of sacral 2/3 and sacral 4/5. The sternbrae are unfused. The ischio-pubic ramus has fused, but the acetabular elements remain separate. An age of 15 to 16 years is in agreement with the evidence from the skull and dentition.

An Os Acetabuli is present bilaterally. The anterior and middle calcaneal facets are discrete. The platymetric index is 90. There are no septal apertures on the humerus.

COMPARATIVE DATA

Iroquois

A large number of Iroquois skulls from ossuaries in Ontario have been studied to determine physical types. A typical Iroquois skull, BWE, from the Bosomworth site near Bradford, Ontario, will be used for comparison.

PLATE VIII



Frontal and lateral views of Skull BWE from the Bosomworth Site (an adult male Iroquois)

Both skulls are large, with almost identical cranial modules. The Iroquois skull is long and narrow with a cranial index of 73.2 contrasted with a cranial index of 84.7 in the Donaldson male. In the Iroquois, the height/length index is lower and the height/breadth index higher than in the Donaldson. Facial proportions are similar. The Donaldson nasal region is shorter and broader than in the Iroquois, and the mandible is larger in all dimensions.

Plate VIII is a drawing of these two skulls, contrasting morphological features. Prominent differences are tabulated below:

<i>Characteristics</i>	<i>Donaldson</i>	<i>Bosomworth</i>
Form of the vault	Round	Long oval
Form of occiput	Not prominent, ridge type	Very prominent, mound type
Supraorbital ridges	Continuous, median, blend with margin	Continuous, V-shaped
Zygoma	Larger, more projecting	Facial region not so flat
Sagittal crest	Present	Absent
Shape of orbit	Rectangular	Round
Lower nasal margin	Blurred	Sharp
Gonial angle	Square, tall ramus	Rounded, shorter ramus
Form of the chin	Bilateral	Median
Canine fossa	Absent	Present

The Kant Site

This skull, from a Point Peninsula 2 Focus site in Renfrew County of eastern Ontario, was excavated by Dr. J. Norman Emerson (1955). It has been re-examined by the author.

The Donaldson and Kant skulls show marked morphological similarities. Both are rugged with short, high vaults. The supraorbital ridges are prominent and of the median type. Muscle markings are strong, and both have sagittal crests. Zygomas, which are large and projecting, produce an almost vertical anterior facial surface. The subnasal margins are indistinct. The occiput is not prominent.

Both mandibles are robust with gonial eversion, heavy muscle markings, tall rami, and prominent coronoid processes. The glenoid fossae are deep.

Cranial anomalies are absent.

In view of the striking morphological similarities between these two skulls, it is surprising and disappointing to find metrical differences of some magnitude. Some of these differences may be related to the smaller size of the Kant skull, as shown in cranial breadth, length, module, minimum frontal breadth, and bigonial diameter. There is an apparent difference in orbital and nasal indices, but height/length index, bizygomatic diameter, and facial proportions are similar.

Let us consider the difference in nasal and orbital indices between these two skulls. The former differ by 8.6 and the latter by 6.4. These indices are derived from relatively small measurements. A difference of one millimetre in each measurement could change the index by four points. An error of this magnitude in both indices could produce a convincing metrical difference between the two skulls. It should be noted that an error of one millimetre in a reconstructed skull would not be surprising.

Although on visual inspection the Kant skull appears to be as round-headed as the Donaldson one, the Kant cranial index places it within the mesocranial range.

In dealing with the crania from the Northeast, the classical division of cranial indices into dolichoecranic, mesocranic, and brachycranic does not

appear to be useful. On the basis of total morphological pattern, the dividing line between types seems to be around a cranial index of 77. Above this value, the brachycranic and sub-brachycranic skulls share similar morphological characteristics, though below this the dolichocranic and sub-dolichocranic skulls resemble each other. Dr. W. A. Ritchie (1945) has demonstrated this in the analysis of the material from Frontenac Island where two morphological types were distinguishable. Dolichocranic skulls belonged to Type One morphologically, brachycranic skulls belonged to Type Two, and some skulls of both types were found in the mesocranic range.

In the case of the Kant skull, resemblances to the Donaldson male are so great that metrical differences are not very convincing. In our present state of knowledge, it would be very difficult to assign these two skulls to two different morphological types.

Red Ochre Burial

This skull is in the Boyle collection of the Royal Ontario Museum. No archaeological information is available, other than the fact that its origin was in Ontario and that the burial contained a great deal of red ochre which also filled the interior of the cranial cavity.

The skull is that of an adult male: large and robust with heavy muscle markings, a strong sagittal crest, prominent continuous supraorbital ridges, a subnasal sulcus, the ridge type of occipital region, large flaring zygomas, rectangular orbital margins, slit-like external auditory meati, medio-bilateral chin form, a tall ramus, and gonial eversion. The only anomalies present are a few Wormian bones included in the coronal and lambdoid sutures, and a very large right jugular foramen. All the adult dentition is present with marked attrition, no caries, three alveolar abscesses, and slight periodontal disease. There is mild arthritis of the occipital condyles.

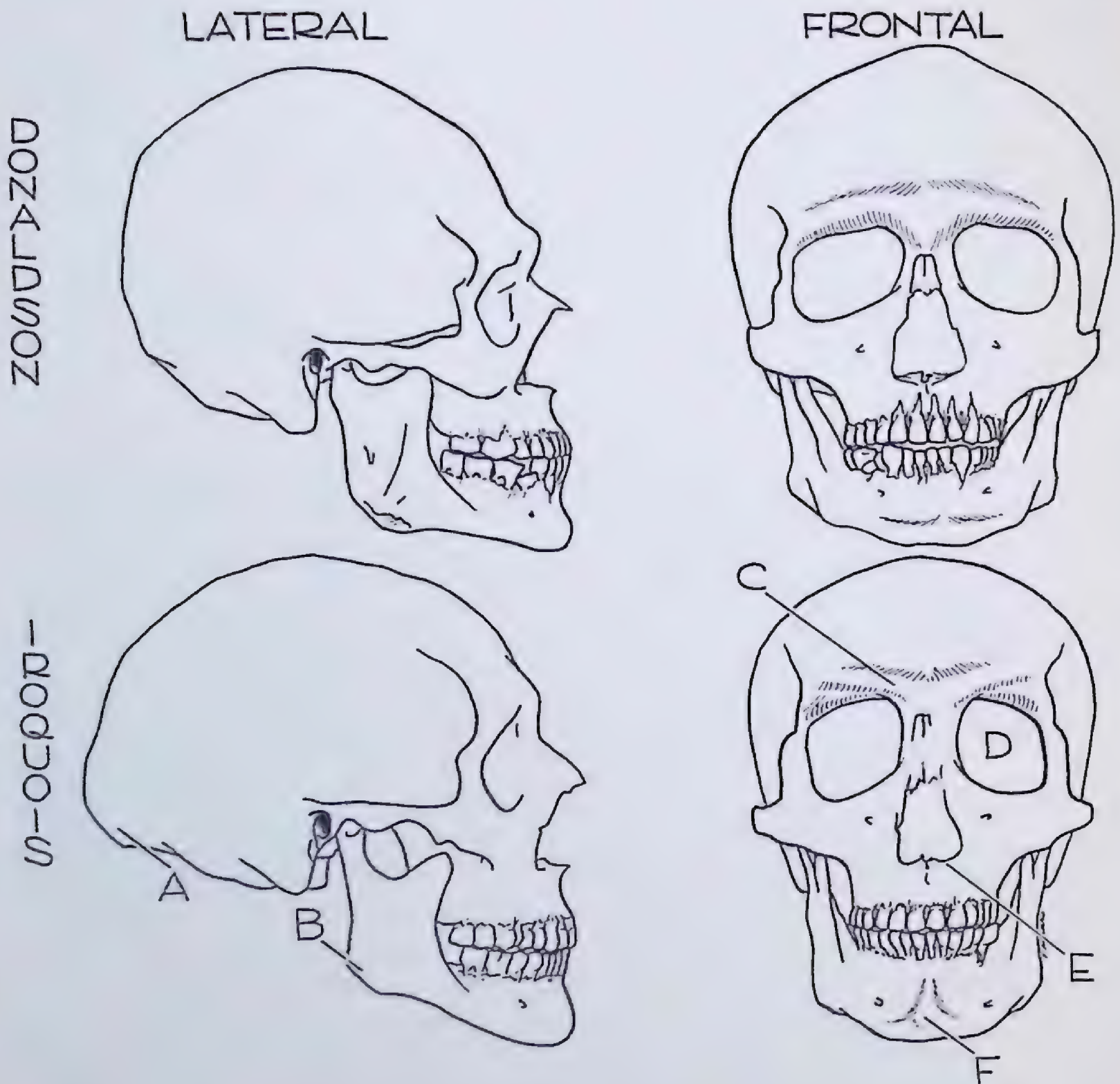
The Southampton Skull

This adult male skull was exposed by a bulldozer at the mouth of the Saugeen River on its south bank a few miles from the Donaldson site. Approximately one hundred feet west of it occurs a stratified site containing Saugeen Focus material in the lower stratum and Middleport Iroquois material in the upper stratum. Mr. J. V. Wright submitted the skull for study.

In a few respects this skull resembles Iroquois crania: the appearance is less rugged than that of the Donaldson one, the orbits are more equilateral with rounded angles, and there is a lower mandibular ramus. However, other morphological characteristics are similar.

The Southampton skull is slightly smaller than that of the Donaldson adult male. This difference is greatest in the height of the cranium. Other metrical values are quite similar.

There is a surprisingly minor degree of dental attrition as compared with all the adult crania of the Donaldson type. No caries or abscesses were present, but periodontal disease is evident.



Diagrams comparing the frontal and lateral views of the Donaldson and Bosomworth skulls. The letters indicate six of the features which differentiate the Iroquois physical type from that of the Donaldson:

- A. Mound-shaped occipital region
- B. Shortened ramus with blunted gonial angle
- C. V-shaped supraorbital ridges
- D. Equilateral rounded orbital margins
- E. Sharper inferior nasal margin
- F. Median type of chin

Total morphological pattern considered, the Southampton skull is of the Donaldson type, but minor differences suggest a slight transition toward the Iroquois form.

The Percy Reach Skull

Professor D. B. Shutt has brought to the author's attention a skull found by Dr. F. E. Chase in 1953 at Percy Reach on the Trent River. This skull has not been studied, but excellent photographs were made available by Professor Shutt. The skull, that of a robust adult male, is high vaulted and round headed. Supraorbital ridges are prominent and continuous. The orbital margins are angular and moderately inclined from the horizontal. The zygomatic bones are large and projecting. The mastoid processes are large, and muscle markings are prominent. The external auditory meati are of constricted oval form, and there are no dehiscences in the tympanic plate. The mandible is massive with tall rami, prominent coronoid processes, bilateral chin form, and gonial eversion.

The full adult dentition is present. Attrition is marked, with exposure of the pulp chamber of three of the maxillary teeth and resultant abscess formation. There is no evidence of caries, but periodontal disease is manifested by recession, loss of alveolar bone, and pocket formation.

Morphological characteristics as shown in the photographs indicate that the Percy Reach skull closely resembles that of the Donaldson adult male.

Other Northeast Crania

The following three groups of crania are compared with that of Donaldson in Table 4:

- (a) One of the undeformed brachycranic skulls (No. 18205) from the Madisonville cemetery in Ohio reported by E. A. Hooton (1920).
- (b) The means of three brachycranic skulls associated with other cranial forms at the Lamoka Lake site reported by W. A. Ritchie (1932).
- (c) The means of the brachycranic crania from the Frontenac Focus, New York State, reported by W. A. Ritchie (1945).

There is close metrical similarity between the crania of these three groups, which almost certainly belong to a single physical type. They differ from the Donaldson skull in being considerably smaller, less brachycranial, broader in relation to height, narrower in frontal breadth, and slightly smaller in bizygomatic diameter. It is interesting to note that they resemble metrically the Kant skull more closely than the Donaldson.

The published photographs of these skulls were studied to gain some idea of their morphological characteristics. They show a close resemblance to the Donaldson. The shape of the vault, the form of the supraorbital ridges, the projection of the zygomae, and the occipital form are all quite similar. They differ mainly in appearing somewhat less robust and in having a somewhat lower ramus of the mandible than the Donaldson.

DISCUSSION

The detailed analysis of a single adult male skull is justified in that it represents one of the few examples of crania from a pre-Iroquoian occupation of Ontario. Comparisons have been made with four other individual skulls excavated in the province, with similar crania from the northeastern region of the United States, and with the Ontario Iroquois physical type.

Difficulties in comparing and contrasting crania stem from three basic problems:

1. The basic similarity of all North American Indian crania. All the skulls reported here share the basic pattern of New World mongoloids. Similarity in many characteristics tends to obscure differences when they are present.
2. The rather low correlation between metrical similarity and morphological similarity. The question arises as to whether close agreement of these two types of data should be sought before affinity between two series may be postulated. The author has minimized the importance of metrical differences and based degree of similarity most heavily upon morphological criteria.
3. The poverty of knowledge concerning the significance of differences, morphological and metrical, between crania. How dependent are these differences on genetic factors, and how much on external influences such as diet? Where do we draw the line of discrimination between two skulls when based on varying expression of continuous morphological traits? How much dependence should we put on arbitrary standards such as the classical division of cranial indices?

As we proceed from comparisons and contrasts, we attempt to lump crania together into physical types.

Table 4 compares the metrical values of the crania described in this report with those of the Walcolid variety of American Indian described by G. K. Neumann (1952). The type series is based on 45 undeformed adult male skulls from the Spoon River Focus of central Illinois. Neumann states that the large-skulled, rugged brachycranial group found in the Point Peninsula Focus of New York State are typologically Walcolids.

One difficulty with the Walcolid category is that, although described as a brachycranial group, the cranial index reported is only 77. If this value is disregarded, other metrical data interpreted broadly, and morphological characteristics given the highest discriminating value, the Walcolid variety may be expanded to include all the crania in Table 4 except for the Bosomworth Iroquois.

Using the same criteria, these skulls may be grouped tentatively according to their similarities. Donaldson, Percy Reach, and the Red Ochre burial form a related group. They bear close similarity to the Southampton skull, through which distant affinities to the Bosomworth Iroquois may be traced. Where Southampton diverges from the Donaldson pattern, it approaches that of the Iroquois, so that although sharing the majority of its characteristics with Donaldson it does bear some similarity to Bosomworth.

The three collections from the United States form a similar group, sharing most of the same characteristics and fitting quite readily into the Walcolid category. Kant resembles both the Donaldson and the Walcolid group and so forms a link between the two, suggesting affinity.

Two hypotheses may be advanced to account for the distinct morphological differences between the pre-Iroquoian and the later Iroquoian inhabitants of Ontario. One explanation is based upon the possibility of the influx into the region of a new physical type replacing and/or hybridizing with the older Donaldson type and contributing to the historic Iroquois.

The second hypothesis places the Donaldson type as the ancestral one, developing into the Iroquois type with the passage of time as genetic and dietary factors modified the morphology. Diffusion of this type from some primary centre (which includes the Bruce Peninsula of Ontario) to the east and to the south has spread a Walcolid population. Regional modification from the ancestral (Donaldson) type has occurred with the passage of time.

The evidence from this report and from other material currently being studied tends to support the latter hypothesis.

The archaeological and physical anthropological evidence from the Donaldson site reflects certain basic cultural and human morphological trends within an, as yet, poorly defined temporal and spatial zone of north-eastern North America. Within the province of Ontario and the State of New York a similar morphological type was present at an early time level. The archaeological complexes in which these similarities are most clearly apparent are closely related (i.e., Saugeen Focus and Point Peninsula 2 Focus). Both the osteological and archaeological data tend to favour an *in situ* development of the Donaldson physical type.

In other words, it is not necessary to propose an invading population to explain the morphological differences seen between the Donaldson physical type and the Iroquois physical type. Similarly, the archaeological evidence tends to suggest that while major cultural influences were moving from the west, these influences may well have been adopted rather than carried and propagated physically from their area of origin.

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TABLE 1.—*Summary of the Donaldson Site burials*

Individual	Cat. No.	Inventory	Condition	Orientation	Position	Age	Sex
1	AA	Skull, mandible, infracranial skeleton	Skull collapsed	N/S heading N., facing E.	Tightly flexed, on left side, hands to face	About 4 years	?
2	AB	Almost complete	Poor, scattered, fragmentary	N/S heading N., facing E.	Flexed, on left side	Less than one year	?
3	AC	Skull fragments and left upper limb	Scattered, fragmentary	Under No. 1 and No. 2	Disturbed	Newborn	?
4	BA	Skull fragments and mandible	Fragmentary	?	Disturbed	One year	?
5	BB	Skull	Damaged face	?	Disturbed	5 years	?
6	BC	Skull and other fragments	Skull intact	Facing downward and slightly S.	Disturbed	Young adult	Female
7	BD	All but right hand	Good	N/S heading S. (Skull removed earlier)	Tightly flexed on right side	15-16 years	Male
8	BE	Complete	Skull damaged	NNE/SSW heading S., facing SE.	Tightly flexed on left side, hands to face	Adult	Female
9	C	Almost complete	Fragile skull crushed	NE/SW heading S., facing W.	Loosely flexed on right side but head turned to left	Infant	?
10	D	All but parts of lower limb	Good (? Late burial)	N/S heading N., facing W.	On back, with lower limbs flexed	26 years	Male
11	E	Skull, fragments, ribs, fingers	Fragmentary, crushed	NW/SE	?	6 months	?
12	F	Skull, 10 fragments	Crushed	NE/SW	?	Infant	?

TABLE 2.—*Donaldson Craniometry*

	Burial D Adult (Male)	Burial BC Adult (Female)	Burial BD (Adoles- cent)	BE Adult (Female)
Cranial length.....	183	183	195	182
Cranial breadth.....	155	138	146	136
Basion-bregma height.....	141	123	140	—
Cranial module.....	160	148	160	—
Cranial index.....	84.7	75.4	74.8	74.8
Height/Length index.....	77	67.2	73.7	—
Height/Breadth index.....	91	89.2	95.9	—
Auricular height.....	125	108	121	—
Minimum frontal breadth.....	102	92	102	98
Bizygomatic diameter.....	147	132	(140)	—
Total facial height.....	128	126	121	—
Facial index.....	87.1	95.4	(86.4)	—
Upper facial height.....	76	(72)	(75)	—
Upper facial index.....	51.7	(54.6)	(53.6)	—
Nasal height.....	52	53	(53)	—
Nasal breadth.....	30	(25)	—	—
Nasal index.....	57.7	(47.2)	—	—
Orbital height.....	35	38	34	—
Orbital breadth.....	44	42	(42)	—
Orbital index.....	79.6	90.5	(81)	—
Alveolar breadth.....	66	(65)	69	—
Alveolar length.....	58	(56)	(56)	—
Maxillo-alveolar index.....	114	(116)	(123.2)	—
Ramus height.....	71	63	56	60
Ramus breadth.....	37	37	40	34
Height of symphysis.....	36	37	35	32
Bigonial breadth.....	115	111	111	108

TABLE 3.—*Donaldson infracranial skeleton*

	Burial D Adult Male	Burial BE Adult Female
Clavicle: Length.....	170	—
Maximum diameter.....	13	—
Humerus: Length.....	360	343
Maximum diameter.....	30	23
Diameter of head.....	46-49	43-43
Radius: Length.....	280	265
Maximum diameter.....	12	18
Diameter of head.....	26	22
Ulna: Length.....	298	285
Maximum diameter.....	18	15
Femur: Length.....	501	484
Diameter of head.....	50	45
Midshaft diameters.....	30/33	28/33
Pilasteric index.....	110	118
Subtrochanteric diameters.....	26/39	26/35
Platymetric index.....	67	74
Tibia: Length.....	424	(405)
Midshaft diameters.....	23/33	22/31
Diameter of foramen.....	25/37	23/35
Platynemic index.....	68	66
Fibula: Length.....	407	390
Humero-Radial index.....	77.8	77.3
Humero-Femoral index.....	71.9	70.8
Claviculo-Humeral index.....	47.2	—
Tibio-Femoral index.....	84.6	83.8
Intermembral index.....	69.2	68.5
Stature estimation (CM).....	181.1 ± 3.2	176.8 ± 3.2

TABLE 4.—Comparative Craniometry

	Donaldson Burial D	Bosom- worth BWE (Iroquois)	Kant	Red Ochre	Southampton	Madison- ville Brachy- cranic No. 18205	Frontenac Archaic (Means)	Lamoka Brachy- cranic (Means)	Walcolid Variety (Means)
Cranial length.....	183	198	179	188	180	180	177	179	181
Cranial breadth.....	155	145	138	139	149	145	145	147	139
Basion-bregma height.....	141	141	140	139	130	138	135	137	144
Cranial module.....	160	161	152	155	153	154	156	155	155
Cranial index.....	84.7	73.2	77.1	74.4	82.8	80.6	81.6	81.7	77
Height/Length index.....	77	71.2	78.2	74.0	72.3	76.7	76.7	76.6	80
Height/Breadth index.....	91	97.3	101.4	100	87.3	95.2	94	93.8	96.5
Auricular height.....	125	117	—	116	110	—	—	—	—
Minimum frontal breadth.....	102	101	89	97	100	92	98	94	—
Bizygomatic diameter.....	147	144	147	(150)	(147)	145	145	140	139
Total facial height.....	128	127	—	(125)	132	—	118	116	125
Facial index.....	87.1	88.2	—	(83.4)	(89.8)	—	81.6	83	90
Upper facial height.....	76	78	71	78	84	74	70	67	76
Upper facial index.....	51.7	54.2	48.3	(52)	(57.2)	51.0	48.4	47.9	54
Nasal height.....	52	58	55	(56)	(61)	55	52	49	54
Nasal breadth.....	30	26	27	30	(26)	28	25	25	26
Nasal index.....	57.7	44.8	49.1	(53.6)	(42.6)	50.9	49.1	52.1	49
Orbital height.....	35	38	37	35	(38)	33	34	33	35
Orbital breadth.....	44	43	43	48	(44)	43	42	42	44
Orbital index.....	79.6	88.3	86	73	(86.4)	77	81.6	79.1	79
Alveolar breadth.....	66	67	—	66	68	65	—	—	—
Alveolar length.....	58	57	—	58	60	54	—	—	—
Alveolar index.....	114	118	—	114	113	120.4	—	—	—
Ramus height.....	71	68	—	73	65	—	—	—	—
Ramus breadth.....	37	34	—	36	39	—	—	—	—
Height of symphysis.....	36	34	35	38	38	—	—	—	—
Bigonial breadth.....	115	110	106	116	120	—	—	—	—

